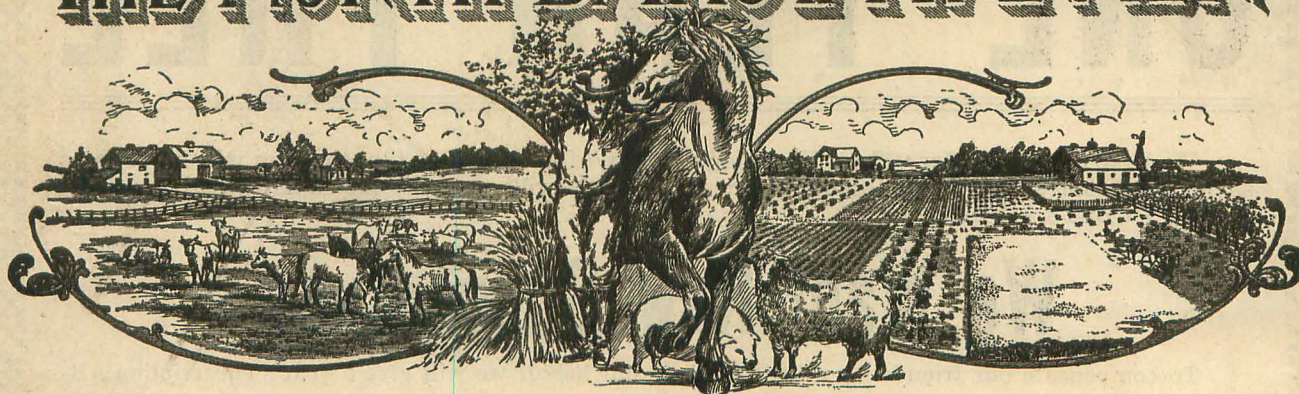


THE NORTH DAKOTA FARMER



"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 10, No. 2
LISBON, N. D.

AUGUST 15, 1908

Alex Alin

311

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FARGO, N. D.



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THE NORTH DAKOTA FARMER

Vol. 10, No. 2

LISBON and FARGO, N. D., AUGUST 15, 1908

50 Cents a Year

MY EUROPEAN TRIP

By PRES. J. H. WORST, N. D. A. C.

AGRICULTURAL ADVISERS AND DUTCH AGRICULTURAL SOCIETIES

J. H. Worst

Agriculture is carried on quite systematically in European countries. The farming is not always the dominant industry, yet the area available for agricultural purposes is cultivated in a most painstaking manner. Owing to density of population the farms are consequently small, and the high price of land makes it necessary for every acre to produce its best in order to insure a fair return for the labor and capital employed. This not only requires great skill but a thorough knowledge of the soil, rotation of crops best adapted for a particular locality, kind and quantity of fertilizers to be used, together with method of tillage that will produce the best results. Farmers make a thorough study of these questions. They may not be conversant with current events, or with the history of the past, but they understand the nature and quality of the soil and how to get big annual crops and yet maintain its fertility and productiveness.

It is obvious that in countries where land is worth several hundred dollars per acre, farming must be made a highly skilled profession—a fine art instead of a haphazard system of soil robbery.

Agricultural Advisers

In Holland an agricultural adviser is employed for each province. This official bears about the same relation to the farmer as a lawyer does to his client. At the Agricultural Experiment Station at Wageningen a laboratory is fitted up with suitable apparatus for analyzing soils, fertilizers and stock food, and a government seed testing station (Zaadproef-station) also is maintained for the purpose of testing garden and field seeds to determine their viability, purity, etc., both of which are at the service of the adviser for the purpose of making such determinations as he may require for his constituents. The adviser being an

agricultural college graduate is also something of an entomologist and plant pathologist. It is part of his official business to become acquainted with the farmers of the province he represents, to examine the different soils and determine their needs, and to give farmers such advice as they may need in order

Many of the provinces of Holland are largely, while some are almost exclusively, engaged in dairying. For these interests expert dairymen are appointed for the country at large, who give the same advice and assistance to the butter and cheese interests as the others give to field and garden crops.

Winter Schools

During the winter these advisers hold farmers' institutes and conduct winter schools for young men. The latter con-



Scene in the Park at The Hague, Holland.

to produce the best crops. Should insect or fungus enemies infest the fruit trees or the crops he is appealed to for a remedy. In short he directs the agricultural energies of the province, in an advisory way, and gives suggestions as to the most profitable markets.

When this system was first introduced it did not meet with universal favor with the farmers, but it nevertheless worked well for now they have the utmost confidence in the adviser, and with but few exceptions follow his directions implicitly.

sist of lectures and recitations on practical farm subjects, which include dairying, special crop rotations, home and commercial fertilizers, methods of cultivation, improvement of agricultural plants and domestic animals, etc. These winter schools are held in the several villages of each province and continue from a fortnight to a month or longer at each place and are well attended. Some of the public schools also give more or less instruction in elementary agriculture, or nature study, illustrating

the work by means of school gardens, while the Agricultural College at Wageningen turns out graduates equipped for professional work such, as trained specialists in various agricultural positions, including agricultural advisers, foresters, chemists, plant pathologists, gardeners, dairymen, as well as practical farmers. Quite a large number of these graduates make special preparation here to enter the government service as agriculturists in the East Indian colonies.

Taken altogether the Dutch farmer's education is quite closely related to his vocation, and is in harmony with it. They think agriculture and talk agriculture and study agriculture. It is the Dutch farmer's art and he becomes quite familiar with its related sciences. No effort is made to citify all the country children nor to feed their young minds so exclusively on exotic ideas. Their text books deal with their environment and they are seemingly being prepared for the life they will have to live, rather than to live an ideal life that exists in the brain of text-book writers or culture fadists.

Agricultural Societies

Practically every farmer is a member of a local agricultural society. These societies meet on regular or stated occasions to discuss matters affecting their avocation. While some of these societies are independent of all others, yet as a rule they cooperate thru what may be termed the provincial society. The latter is composed of delegates sent from the several local societies and meets once a year or oftener for the purpose of transacting business of a general character affecting the agricultural interests of the whole province. Such questions frequently arise. For instance it might be suggested as good policy for the government to furnish free stallion service for the horse breeders of the country. If the local society within which the question is raised should view the proposition with favor it would authorize its delegates to bring the matter before the next meeting of the provincial society. If it should meet with favor there the question would be referred back to all the local agricultural societies for consideration with authority to report at the next meeting of the provincial society. Should a majority of the local societies report in favor of the measure the question would be taken by the other provinces, and if found generally popular would be referred to the minister of agriculture.

Reasonable requests made by farmers thus after full discussion and mature deliberation are usually granted, especially where the purpose is to encourage improvement of livestock or the productiveness of the country.

Co-operation Among Farmers

Dutch farmers usually find it necessary to produce large quantities of supplies in the form of commercial fertilizers, fuel, seeds of different kinds, as well as oil cake and other forms of stock food. To purchase these commodities economically, and to avoid the possibility of collusion on the part of local dealers to exact an unfair price, the local agricultural society transacts this important business for the farmers. Nor is it a difficult matter to do so where farmers have confidence in each other, and are willing to cooperate. Each farmer simply reports to his local society the quantity of each of the above named, or other commodities he wishes to purchase. The totals are arrived at and the number of tons or bushels of each are advertised so that dealers may bid for the business.

These contracts are always let under strict guarantee as to weight and quality, and any deviation from the strict terms of the contract subjects the dealer to considerable inconvenience. As a result the farmers get exactly what they pay for, at wholesale prices, except that a small commission is added to defray the legitimate expenses incurred by the officers of the society who transact the business.

I was informed that the system works admirably; that the saving to farmers as compared with former methods is immense; that the goods are always as represented or advertised for; that such a thing as graft on the part of the society is unknown, and that farmers always pay for what they order as soon as it is delivered.

In many other ways the farmers take advantage of different forms of co-operation. Co-operative starch factories, cheese factories, paper mills, etc., are quite common, and many of the essentials of the farm and home are purchased, usually thru local societies, more economically and of better quality.

Trusts and combinations of capital work but small injury to Dutch farmers since they have learned to manage their own affairs. Having the whole world to draw upon for their supplies, and the world's market for the products of their co-operative factories, and having a banking system of their own they can bid defiance to every form of financial or industrial oppression. Capitalists are as thoroly at the mercy of farmers there as farmers are at the mercy of capitalists here.

The Farmers' Saving Banks

The saving banks of Groningen, one of the provinces of Holland, are a peculiar institution. Their chief purpose is to encourage the farm laborers to own their own homes. These banks are managed by well-to-do farmers, known as the Society for the Benefit of the

General Public, who make no charge for their time, and make no profit out of the business. It is in reality a benevolent institution.

The bank is open one day each month for the deposit or withdrawal of money. Laboring men, chiefly those that work on farms, are encouraged to save a small portion of each month's wages for deposit, and for which the bank pays them three and one-half per cent interest. When a laboring man has half enough money on deposit to build a house (on leased land) the bank will loan him an equal sum, for which it charges him four per cent interest. A very comfortable house can be built in Holland for about \$500. The bank takes a mortgage on the house as security for the money thus borrowed, and the borrower continues to deposit small savings until the mortgage is satisfied. These houses are all constructed of brick, with tile roof and are neat and of fair size. The Hollanders have a law regulating house building, specifying the minimum size that may be built for any family.

These banks are numerous and handle, in the aggregate, large sums of money, for tho the deposits are small the number of depositors is very large. And altho it usually requires a life time to secure a home in this way, yet laborers quite generally are saving their money for this purpose. This society, thru its savings banks is doing a great work for the laboring class of Holland. Instead of spending a portion of their earnings as formerly for gin, these men are encouraged to give up their drink and secure a home instead. As a result the gin dealer's business has decreased in proportion as these savings banks have flourished, until now only about one per cent of the laboring class are said to drink to excess, while nearly one-third of this class own their own homes. It is quite common now for a young couple engaged to be married to defer the ceremony until six hundred guilders (\$240), half the sum necessary to build a house, have been earned. To earn this money both engage in service until they have jointly deposited the above named sum, then borrow an equal amount, build a home and proceed to save enough money to pay off the mortgage.

In Holland as elsewhere, when a man saves a little money he likes to see the sum grow and the saving habit becomes strong. It is also claimed that as soon as a man owns his own home he becomes a better citizen. He takes more active interest in public affairs and develops a decided tendency toward a higher standard of living. His ambition is also aroused to better the condition of his children, and instead of becoming mere unskilled laborers in the fields, he would have his boys become machenics and his girls seamstresses, or at the least follow

some higher calling, than to continue in the ancestral routine of hopeless drudgery.

IOWA FARMERS CURB THE GRAIN TRUST

Cerro Gordo County Grain Growers Do Things

C. V. Gregory in Orange Judd Farmer

The advance of the co-operative elevator movement has been spectacular. Five years ago there was scarcely a company of this kind in Iowa, and business men scoffed at the idea when it was proposed. But successful societies of this kind were not entirely new, for one had been in operation at Rockwell, Ia., for a number of years. The history of the Rockwell organization reads like a romance. Under the leadership of such men as Thomas McManus and "Jim" Brown, the farmers in the surrounding country were organized, and so well organized that they went down into their pockets for \$10 a piece, which they exchanged for a beautiful colored certificate of stock in the new company. When a farmer becomes interested in any enterprise to the extent of \$10 his loyal support is assured, for he knows exactly how many backaches are folded up in a \$10 bill.

The farmers of Rockwell had faith in their organization, and what meant much more, faith in their officers. And it was well that they had, for the new company did not have smooth sailing by any means. "Before the year is over," the agent of the line elevator company told McManus, "the grass will be growing over your driveways and the birds will be building nests in your elevator cups."

Farmers Proved Their Business Ability

But today that line elevator man is selling baby cabs for a living, while the rats dig unmolested among the rotting timbers of his elevator. Local business men who advised the farmers to stay in their green fields and pastures and leave business to men who understood it, have long since packed up and departed for greener fields themselves, while the farmers' co-operative society holds undisputed sway, buying anything the farmer has to sell, from honey to fat cattle, and selling him everything he needs, from axle grease to rubber boots.

The society was fortunate in securing the elevator of an independent dealer, as otherwise the fight for a site which embarrassed so many of the later companies might have brought the movement to an untimely end. The story of the fight of the farmers of the neighboring town of Dougherty to compel the Northwestern railway to grant them a few square feet of land on which to build an elevator, of the refusal of the railroad to comply

with the demands of the farmers, while the line elevator continued to take their grain at 6 to 8 cents below the market price, of the trip that McManus and some of his colleagues made to Des Moines, where his honest, Irish tongue argued and pleaded with an unresponsive legislature, and of the final surrender of the railroad, is still a household legend in Cerro Gordo county.

Real Troubles Successfully Overcome

But the real troubles of the Rockwell farmers did not begin until after they had closed the deal for their elevator and commenced buying grain. The line elevator met their prices promptly and went them one better. It was easy money for them. A cent above the market price in Rockwell, a cent below at some point farther down the line, and their profit and loss account broke even. But to the farmers of Rockwell this competition was a serious matter. A few stuck by their own elevator, but that extra cent looked bigger than a harvest moon to many of them, and their grain went over the scales of the line elevator, while the manager smiled pityingly at the empty bins of the farmers across the way.

It was then that the leaders of the co-operative movement evolved the plan that laid the corner stone for their success, as well as for the success of the hundreds of companies which have since been formed on the Rockwell plan. This was the much abused and much misunderstood penalty clause. This clause simply provides that every member of the organization pay a certain commission, in this case one-fourth cent, on all grain sold by him. This money goes into the treasury of the society to pay operating expenses.

If the farmer sells his grain to his own elevator the one-fourth cent is deducted from the price which he receives. If he sells to some other elevator he must turn in the commission to his own company just the same. Nothing could be more simple. Nothing could be more fair. Such a provision affords absolute protection to the company and works no injustice to the farmer. As long as its members raise and sell grain the absolute safety of the company is assured, whether it handles the grain or not, and the very existence of the company assures to the farmer a price much more than one-fourth of a cent higher than he would receive if the only check on the prices of the line elevator company was its own avarice.

Grain Trust Threatens to Boycott

Baffled at this point, the grain trust sought to attack the farmer in a still more despicable way, by threatening to boycott any commission man who should be found guilty of handling grain from a farmers' elevator. And the pow-

er of the grain trust was well shown by the way in which they put this rule into effect. Everyone who has ever attended a farmers' society, rally or picnic, has heard E. G. Dunn tell the story of the two cars of oats which he shipped from the farmers' elevator at Burchinal to a little siding in Chicago, where they were avoided by the commission men as carefully as if they had been loaded with dynamite. The commission men vowed that they would let the grain rot on the track before they would touch it, and Dunn was almost at the point of going to Chicago to act as his own commission man when one firm, less fearful of the grain trust than the others, took the oats, which had graded No. 2 in Burchinal, as No. 4, and paid about 8 cents a bushel less than they were actually worth on the market. This system of under-grading became the most serious difficulty with which the farmers had to contend and it was not until commission firms were organized for the purpose of handling farmers' grain exclusively that it was wholly overcome.

These are only a few of the methods which the grain trust used in an

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attempt to overthrow a movement which cut such serious inroads into its business. No plan that human ingenuity could devise did they leave untried. But in spite of all opposition the farmers' elevator movement has flourished. For more than 14 years the Rockwell society fought the battle unaided, but today there are over 220 such organizations in Iowa, almost as many in Illinois, and many others thruout the other states in the grain belt. Iowa, Illinois, Minnesota and South Dakota each have state organizations. There is at least one official organ, and from three to half a dozen men are on the road all the time organizing new companies.

The movement has met a popular demand. Farmers have found out that it is not necessary to submit to unfair prices and inefficient service. They are learning that their place is not entirely in the fields, and that it is often as profitable to cultivate their business talents as to cultivate the soil. And this is only a beginning. Already there are many co-operative creameries in successful operation thruout the west, and co-operative flour mills, packing houses, etc., are not idle fancies, but actual realities. The co-operative idea has been successful in breaking the power of the grain trust. Who knows but that co-operation may prove as effective in dealing with the larger trusts?

SEED CORN PATCH

By G. I. Christie, Purdue Experiment Station

Under average methods of seed selection and field conditions there is from year to year more or less deterioration in all varieties of corn. This "running out" or "losing in quality and producing power" of a variety is largely due to mixing and careless selection.

Corn growers are also finding that much trouble and loss is resulting from seed corn harvested late in the fall. They recognize that the best results can be obtained only when the seed is selected early and stored in a proper manner. For these reasons corn growers should employ methods in selecting, planting and harvesting which will give seed of the highest quality and strongest vitality.

One way in which every corn grower can do much to improve and maintain the quality in a variety of corn is by planting a seed corn patch. For this patch he should select about twenty-five of the best and most typical ears of corn of the seed to be planted

this year. A germination test should be made of each ear in order that no weak ears may be planted. Shell off and discard the small and irregular butt and tip grains. Then shell the ears together and mix thoroly. At the usual time of planting, plant this corn on the south or west side of the field to be planted with the same variety. This location should be changed if it is near a field planted with another variety. Give this patch usual good cultivation, keeping the ground free of weeds and preserving a loose soil mulch. When the corn is five or six inches high, go thru the patch and remove all weak or backward plants. Also when the tassels begin to appear, go thru and remove them from all stalks which are either weak, barren, smutted, badly suckered or for other reasons undesirable. When the corn is mature and not later than October 15th, the seed should be harvested. Select the seed ears from the strongest stalks with a large leaf development and those bearing the ears four or five feet from the ground, and holding it in a right position.

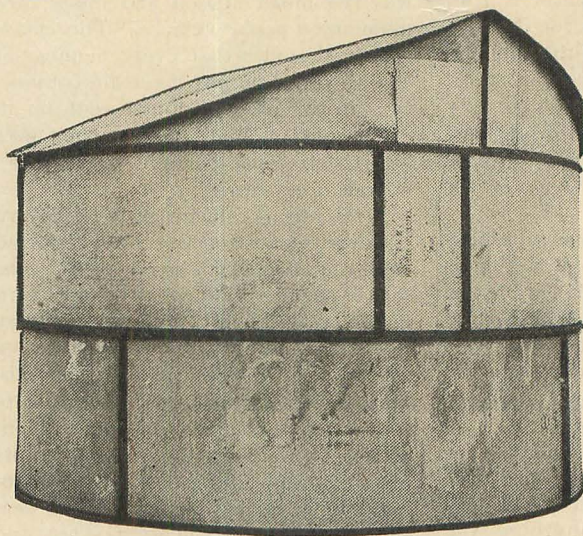
Thru the seed corn patch the farmer can do much to fix a desirable type in his corn and to reduce the number of barren, diseased and suckered stalks that appear in his field. It also furnishes him a convenient place from which his seed corn in the fall can

be selected and he knows that it is from the best seed that he planted.

TARRED WITH THE SAME STICK

Grumbling, fault-finding, criticizing and kicking are indulged in by every class that earns a living by the sweat of the brow. There are broad-minded men in all the walks of life who take a philosophic view of life and its ills but they are quiet people who do not air their views unless questioned, while the disgruntled element in society is spreading discontent and discord everywhere and on every occasion—and they even make the opportunity.

The farmer has the same kind of human nature that everybody else has. He has it intensified. If he is inclined to be kind-hearted and generous he is so trustful that he is apt to be badly fooled by some scoundrel. If he is of a suspicious nature his hours of hard work alone with his thoughts seem to develop a bitterness and pessimism that make him a knocker against everything and everybody. He believes every man is trying to cheat him and do him an injury. According to his narrow views every stock buyer and elevator man has a rigging on his scales to give short weight on the stuff the farmer sells, the buttermaker at the



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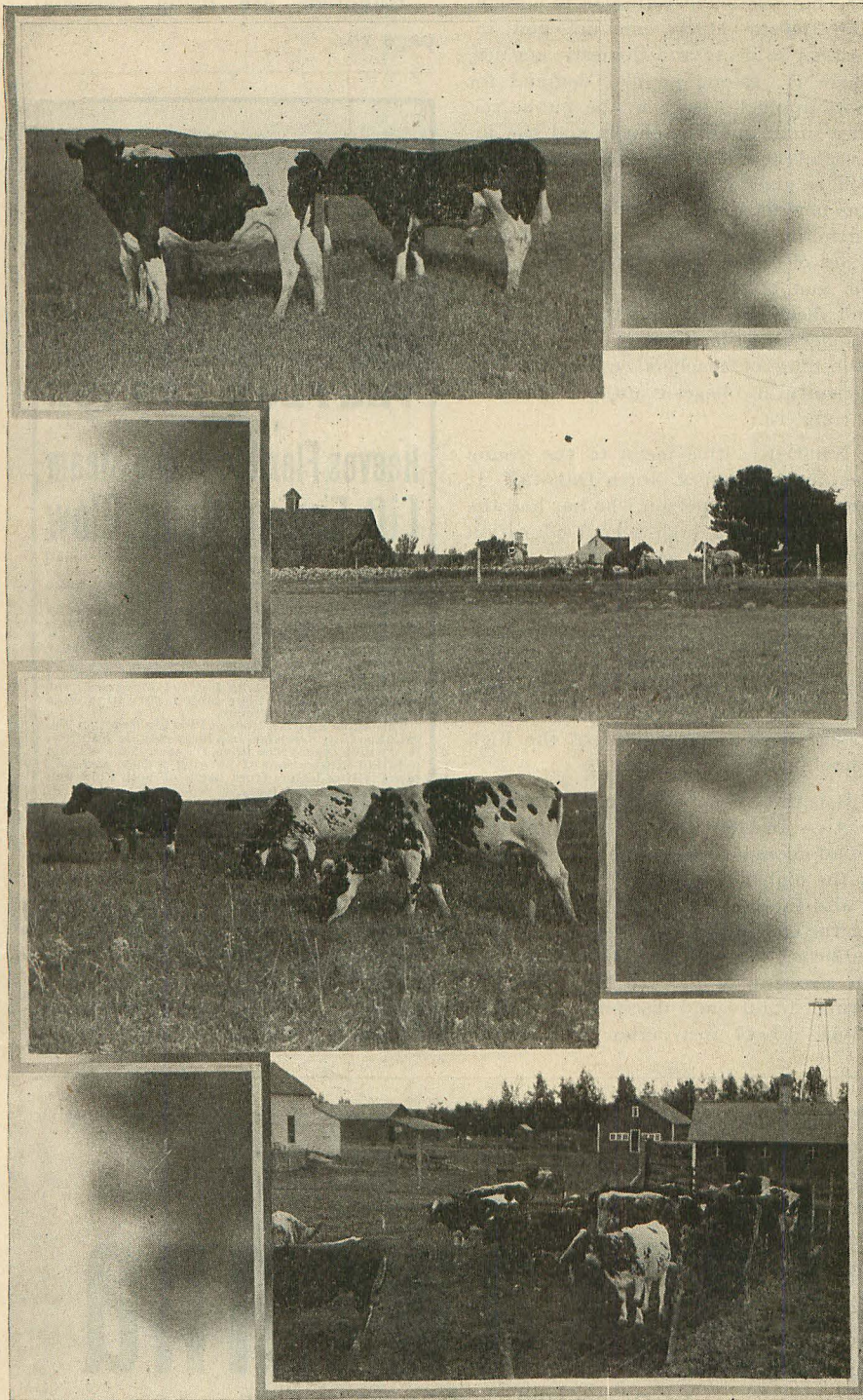
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Four Hints to the North Dakota Farmer.—Livestock Yields a Sure and Steady Income

creamery gives unfair tests, the grocery man discriminates against his stale eggs, the railroads are robbers, the bankers are legalized highwaymen, the merchants are in cahoots against the down-trodden farmer! My, what a condition of affairs! He'd like to be in the legislature or congress, he'd show 'em!

All that is necessary to "show 'em" is to hold the mirror up and let everybody look into his secret soul and see that human nature is the same

brand of goods under various grades of shirt bosom. We admit that some grain buyers cheat the farmers, some stock men have given short weight, some bankers have been merciless in their grasp for gold, some merchants have been ungentlemanly to the lady who continued to bring in dirty, stale eggs and good-for-nothing country butter, but bless you! we must also admit that some farmers have been caught in cheating and tricking that would make the craft

blush with the shame that comes upon all thru the chicanery of a few "black sheep."

If it is wrong to cheat at the elevator it is wrong to put stones in the grain; if it is wrong to fix the scales when the hogs are sold it is wrong for the farmer to stuff the hogs with slop just before the weighing. If it is wrong for the merchant to weigh in wrapping paper it is also wrong for the farmer to put infertile incubator eggs in the case with the rest, or water in the milk, or worthless apples in the middle of the barrel. If it is wrong for the banker to exact his illegal rates of interest it is likewise wrong for the farmer to shrink his taxable valuables when the assessor comes around. Fact is, dishonesty is dishonesty wherever you find it.

No class of men can point the finger of scorn at any other class and say "thief" "grafter" or "scoundrel."

"There is so much good in the worst of us, and so much bad in the best of us, that it scarcely behooves any of us to speak ill of the rest of us." When it comes right down to the inner tendencies we will find that we are all tarred with the same stick.—Ex.

SMALL GRAIN CULTIVATION

The Nebraska experiment station has just issued bulletin 104 giving the result of seven years' experiments with the cultivation of small grains, eight years' experiments with the use of heavy and light seed wheat, and three years' experiments with the use of heavy and light seed oats. Where drilled oats have been cultivated for seven years in comparison with uncultivated drilled oats, there has been an average increase in yields of 4.8 bushels per acre. The cultivation has consisted usually of one to three harrowings given about four to six weeks after sowing. Where oats are to be cultivated, it is found much better to drill them than to sow broadcast. For example, during four years drilled oats, both cultivated and uncultivated, were compared with broadcast oats. During the four years the drilled oats gave an average increase of 5.3 bushels per acre as the result of cultivation while the broadcast oats actually decreased in yield 1.9 bushels per acre. This is probably due to the fact that in broadcast oats a large number of plants are either destroyed or injured by cultivation. The cultivation of winter wheat by the use of a harrow or weeder has not given increased yields. The greatest benefits of cultivation, especially with oats, have always been derived during dry years, while in seasons of more than normal rainfall, even with the oats, there has sometimes been an

actual decrease in yield from cultivation.

Where the wheat was broadcasted and cultivated, an actual loss amounting to an average of three bushels per acre has resulted in the four years' experiment. Where the wheat was drilled the loss amounted to only one-half bushel per acre.

Quite astonishing results have been secured from rolling the winter wheat in the spring, an average increase for four years of 5.1 bushels being secured. The rolling was given soon after frost went out in the spring, and the benefit derived from rolling is believed to be due to the fact that the roller settles the earth firmly about the young wheat roots, causing them to stool and root much better.

For eight years experiments have been conducted comparing the use of heavy seed wheat separated by a fanning mill with light seed wheat and ordinary unseparated soil. The heavy seed has been the heaviest fourth of the crop each year and the light seed the lightest fourth. Two varieties, Turkish Red and Big Frame wheat, have been used in the experiment. There has been no average difference in yield or quality of the crop resulting from the use of heavy or light seed. Similar results have been secured for three years with Kherson oats. The data indicate that where seed wheat or oats have been reasonably cleaned in the threshing machine no increased yield is to be expected from the further use of the fanning mill in separating the light and heavy grain, altho there is an advantage in removing all foreign seed and also all straw and chaff which would prevent the seed from feeding evenly thru the drill. This seems to be due to the fact that there is no hereditary difference between the heavy and light grains, as both types come not only from the same plant but from the same head, and therefore it would be expected that the two kinds are likely to produce the same quality of grain.

NORTH DAKOTA AGRICULTURAL COLLEGE, DEPARTMENT OF EDUCATION

Arland D. Weeks, Professor

An Educational Opportunity

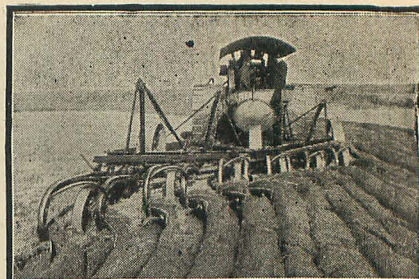
The North Dakota Agricultural College at Fargo has recently established a department of education for the training of teachers for superintendencies and high school positions. The purpose is to advance the type of education represented by the Agricultural College by supplying teachers not only broadly trained in science, language,

etc., but particularly trained in agriculture, nature study, manual and industrial subjects and domestic science. There is strong popular demand for more applied science in the public science in the public schools and the industrial character of the Agricultural College gives it a commanding place in this new movement in education. The furthering of the application of the principles of science to common pursuits is the aim of the colleges of agriculture and mechanic arts and the training of teachers is a step to that end. The establishing of teachers' courses in the agricultural colleges is authorized by act of congress.

What does this mean to the young men and women of North Dakota? It means that any person who has had the equivalent of a high school education may receive free a four-year college course leading to the degree of bachelor of science, and by shaping his course so as to include certain prescribed courses in pedagogy will secure teachers' credentials good for life. In North Dakota and quite generally elsewhere a college degree is required of the high school teacher.

It is the part of wisdom for the prospective teacher to lay a foundation broad enough to meet the requirements of the higher educational positions. It is also the part of wisdom to get ready for the changes in subject matter in the public schools which are being made by the pressure of modern life. The old formal, library and disciplinary type of public school instruction will be in-

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page 28.



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creasingly modified by newer ideals. In the near future a new type of teacher will be found in the school room.

The College will also offer courses in its preparatory department for elementary school teachers. Graduates of the eighth grade may enter here and secure completion certificates for first and second grade teachers' certificates. In the meantime the student is gaining credits for college entrance. In the elementary teachers' course as much time as possible is allotted to elementary agriculture, nature study, domestic science and manual training.

CEMENT AND BARN FLOORS

The farmer who does not make use of cement for the construction of his floors is not only extravagant but can not possibly realize the advantage of such a floor. The following from the Farmers' Tribune is well worth considering:

In laying a cement floor the thing of prime importance is the securing of a firm foundation. To this end excavate or fill in with dirt in the barn until the desired height has been obtained. A barn floor when finished should be at least eight inches higher than the surrounding ground outside. In addition to this, see to it that the floor is well drained. If necessary lay a tile under the center of the floor and connect with tiles leading away from the barn and barnyard. Ordinarily it will not be necessary to tile under the floor but it is always desirable to lay tile outside of the barn so as to keep the ground surrounding it dry.

Whether the floor has to be excavated or filled in it should be thoroughly tamped so as to make it solid and the ground should be given the slope which the floor should have when finished. This done, add a layer two or three inches thick of brickbats, cobblestones, coarse cinders, or anything else of that nature available, pounding it down into the soil as thoroughly as possible. This will give a firm foundation for the concrete, which should have a thickness of about three inches for a cow stable or hoghouse, or about four inches for a horse stable.

Concrete may be made from clean gravel and stone, or still better, from crushed stone alone if this is available. Mix six parts of gravel and stone, two parts of sand and one part of Portland cement for the concrete, being careful that the stone and sand used are clean, that is, free from dust. Where crushed stone is used it is a good plan to wash it with water before mixing with the sand and cement, allowing it to dry, of course, before mixing. This washing is to remove all particles of fine dust. It is

very important to remove the dust because it interferes with the proper cementing together of the concrete. Mix the stone, sand and cement dry, then add enough water to moisten the whole without making it sloppy and spread evenly over the floor to a depth of three inches, firming it thoroughly by pounding.

The concrete should be laid in sections or blocks and not all at once. The blocks may be from four to five feet square. For floors behind the cows, or in feed alleys, the blocks may be made three feet square, should that size fit better. In case of cow stalls each stall may form a separate block or it may be divided into two blocks. If it is made in one the blocks would be approximately four feet eight inches long by three feet wide. The reason for laying the concrete in blocks is to prevent cracking of the floor. In laying a floor use wooden frames made of two-inch planks and finish alternate blocks so as to give each an opportunity to partially harden and set before the next one is laid. This prevents adjoining blocks from cementing closely together, thus leaving each block separate from all the others. After the concrete has been laid and has partially set put on a finishing coat made of two parts of fine sharp sand, and one part of Portland cement. The sand and cement should also be mixed dry and water enough added after a perfect mixture has been obtained to make it of such consistency as will allow it to run in between the particles of stone and concrete and form a perfect union with the same.

The finishing coat should be three-fourths of an inch thick in stables for cattle or animals of lighter weight, and

about one inch thick for a horse stable. After the finishing coat has partially hardened, but while it may still be molded, break thru to the concrete with a trowel over the joints between the blocks, smoothing and rounding off the edges. If this is not done the finishing coat will be apt to crack. While the cement is setting keep wind and sunshine out of the barn to prevent it from drying out too rapidly. In addition to this sprinkle the floor with water three or four times a day so that it may absorb enough water for perfect setting.

It is a good plan in making a cow stable floor to begin with the gutter. This should be at least eight inches deep and 14 inches wide when finished and a thicker finishing coat should be applied. We would build the stalls two inches higher than the floor behind the gutter. Thus the gutter would be eight inches high on the upper side and six inches high on the lower. As to the width of the gutter, there is a difference of opinion, some claiming that it should not be less than 18 inches tho 14 inches ought to be wide enough. It is a great deal better, however, to have the gutter a little too large than too small. When building the edges of the size gutter mentioned, an eight-inch plank will be needed on the upper side and a six-inch one on the lower. The bottom may be made after the sides have been built. The gutter should have a gradual slope to one end of the barn, but this need not exceed one inch in 50 feet, thus on the upper end

Boys Interested in Corn Culture Contests Should Read Personal on Page 28.

First Cost the Only Cost

Look to the future when you buy your wagon and buy it once for all. For the same money you would pay for a good wooden wagon you can get

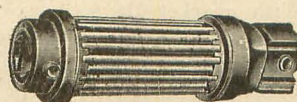
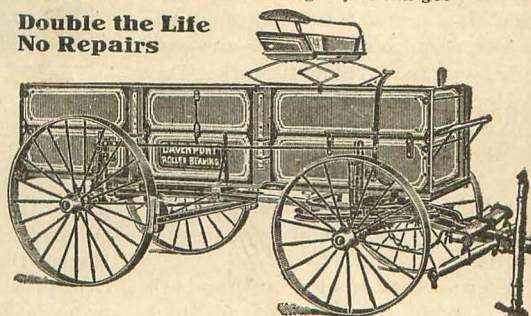
**Double the Strength
No Breakdowns**

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By buying the

Davenport Roller-Bearing Steel Wagon

It is practically all steel—trussed steel wheels, steel gears, steel hubs like the modern automobile—nothing to dry apart or get loose.



The Roller-Bearings

Make 30% to 50% Lighter Draft

This is the greatest advance ever made in wagon building. They are dust, sand and water-proof. Need oiling only occasionally, oil without removing wheels. Let us show you why it's the only wagon you can afford to buy. Send for free Catalog R and do it today, before you forget.

Davenport Wagon Company, Davenport, Iowa

make it a trifle shallower than mentioned and on the lower end a trifle deeper. The stalls themselves should not slope in that direction. Cow stalls should have a slight slope from the front toward the rear. This need not exceed one-half inch. In other words, a cow's front feet should not stand more than one-half inch higher than her hind feet. A medium sized cow requires a stall four feet eight inches long from the stanchion to the edge of the gutter—a small or a large cow a trifle shorter or longer stall.

Before laying the floor a definite plan should be worked out with reference to the kind of stalls that are to be used and a tie should be selected by means of which the stall can be lengthened or shortened to suit the cow. A stall that is too short for a cow is just as objectionable as one that is too long. There is only one way to obtain satisfaction from a stall and that is to have it of the exact length of the cow.

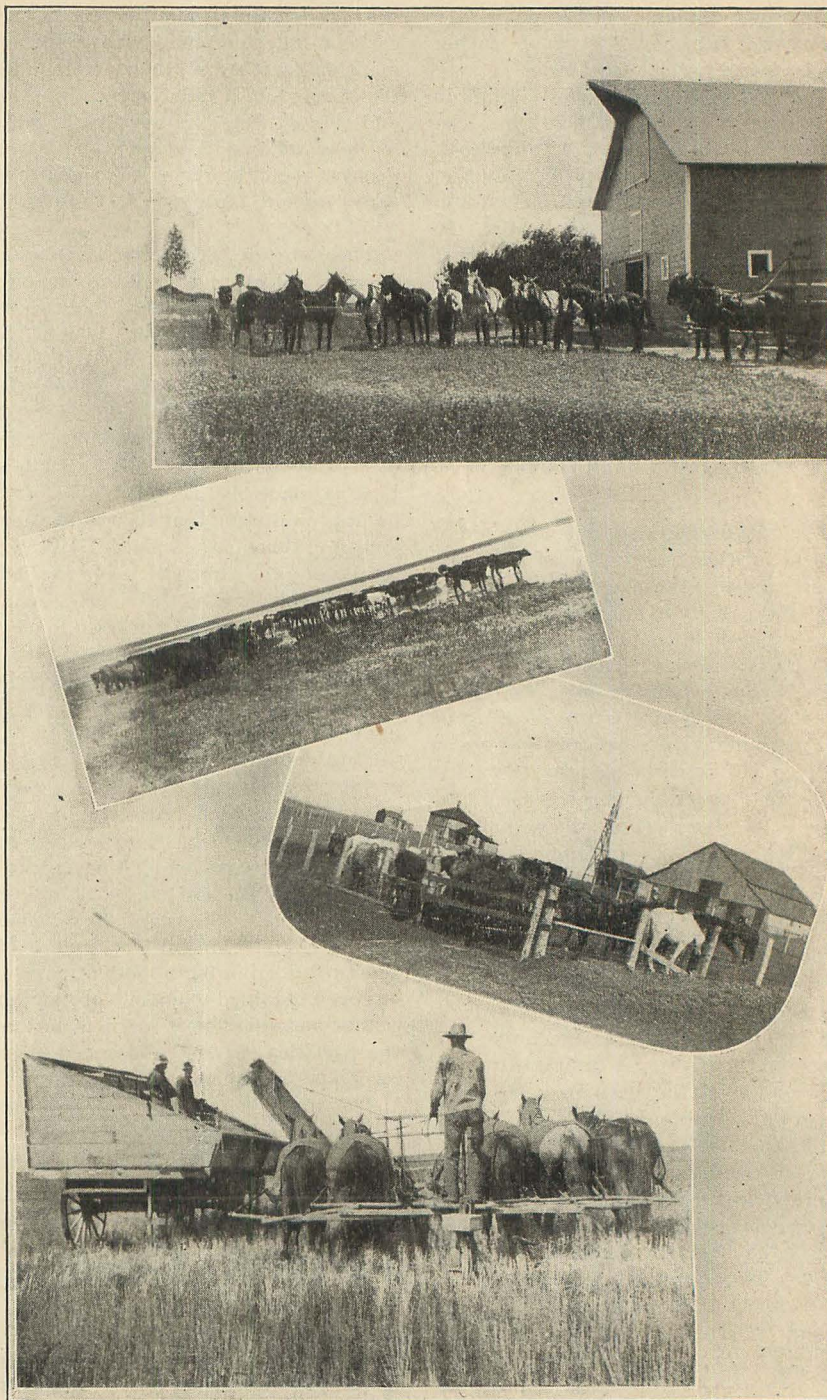
Do not smooth the cement either in the stall or the walk behind it too much. In finishing the surface use a straightedge made from unsurfaced lumber and draw this over the surface leaving it a trifle rough. If it is made perfectly smooth the floor will become slippery and consequently somewhat dangerous for the cattle, especially in winter when they come into the barn with snow on their feet. The feed alley may be smoothed as much as desired.

A BIG MARKET DAY

For Williston on August 22, 1908.

A new venture is to be launched in this city, in the shape of what is known as a Monthly Market Day. Mr. Gillen the man who is promoting the proposition, has been establishing similar institutions thruout the Northwest, and is said to have met with decided success. The first Market Day and Horse and Cattle sale will be held in Williston, Saturday Aug. 22nd. And the indications are that it will be one of the biggest business events ever held in this section. The promoter will start the business off with a rush that will assure success.

There will be mailed out hundreds of circulars to the farmers and stock raisers in Williams county. Foreign buyers thruout the northwest in whose interests the promoter is working in establishing these market days and horse and cattle sales at convenient points thruout the state will be notified of the first market day and all subsequent ones during 1908, and they will attend the sales from month to month in



Scenes on Our Prairie Farms.

largely increasing numbers, until Williston becomes the greatest livestock market in the Northwest. Williams county farmers will soon learn that on these Market Days they can really obtain good cash prices for their live stock and will bring in horses and cattle by the hundreds. With market days, however, the live stock sales are only an instance. Farmers will also learn that it will be cheaper to bring in their personal property to these great sale days, when tremendous crowds will always be present, than to hold sales on their farms as is the custom at present. They will be benefited by patronizing market days

as sellers in the saving of any advertising whatever, and best of all in being sure of having large crowds to buy their stuff. Farmers from hundreds of miles will attend these market day auction in Williston each month.

And sales on farms will be a thing of the past. Everything brought in for the first sale will be sold without charge to the owner, the business men will be called upon for a donation and in view of the fact that there will be no expense to them for the future market days and the great benefit to be derived from the permanent establishment of the same in this city the promoter hopes that they will

be liberal. Mr. Gilen wishes it thoroly understood that when he leaves Williston his work in keeping up these market days never ends. He keeps on boosting for Williston among stock buyers and stock raisers everywhere and thru the newspapers so that whatever is left from the subscription after he pays all the expenses however large the balance may be, never is sufficient to pay for the permanent good they bring the city.

You know what it means to bring a large crowd of farmers and their families and foreign stock buyers to your town on a certain day in each month bent wholly on business.

That's what market days will do. They are conducted on sound business principles—business for the farmer and business for the merchant. The former brings in horses and cattle and anything else he desires to have sold at auction or private sale; the foreign buyer from the principal cities in the Northwest is present in large numbers to purchase the live stock.

On these stated monthly market days, the merchant advertises in his general way reduced prices on all lines of goods. A few genuine bargains in each store are absolutely necessary in order to make your town an added drawing attraction to the purchasing public on these monthly market days. The farmers soon learn that they offered for sale in your town on the monthly market days, and where the stock is sold at auction, good prices are obtained by the farmer from these competitive bidders. As soon as the farmer knows his home town is enterprising enough to establish monthly market days, at which he can get good cash prices for his stock, he is going into the live stock business on a larger scale, and thus diversified farming is greatly encouraged. And with diversified farming and market days there are twelve cash seasons in the year instead of one, where grain and hay growing is the main pursuit. It puts the merchant's business strictly on a cash basis, and largely increases his trade.

WHOSE FAULT.

A good many adverse reports have been sent out from the state claiming that the damage to crops was the result of hot winds exclusively. Those who have closely investigated the damaged crops in all parts of the state find one general condition, and that is that the worst damage on all kinds of land has followed where slipshod methods of cultivation have been employed. Land that was not plowed sufficiently deep, and grain seeded sufficiently early, or put in in a hasty and unfarmerlike manner, has suffered the worst. To prove that the crop damage on cer-

tain fields that show the worst aspects is not due to the country of the weather, or the soil, but principally to poor farming, any one can see good crops in the immediate vicinity of a poor one. On one side of the road will be found a good piece of grain, on the other, grain that is either choked down by weeds and foul seeds, or burned up. In the Red River valley, where it is not claimed that hot weather has done any considerable damage, a large percentage of the grain crops are choked by noxious weeds, while adjoining fields will present a fine, luxuriant stand of grain, with every promise of a big yield. This shows that it is the fault of the farmers in hasty cultivation rather than the soil or the weather. The same old truth applies this year with greater force than ever. A smaller acreage well cultivated and properly seeded, will bring better returns than a larger acreage put in in a hurried and unbusinesslike way. Those who blame the country and the weather for loss may do well to look to their own lack of enterprise first.

WOOD PRESERVATION FOR HORTICULTURISTS

During the coming year the government will extend its experiments in wood preservation to cover an entirely new field—the work of treating greenhouse timbers.

Decay takes place very rapidly under the conditions of high humidity always found in greenhouses and horticultural buildings. The timber at present em-

ployed in the construction of such buildings consists for the most part of the naturally durable and relatively expensive kinds, such as select cypress and white pine. By a preservation treatment other cheaper and less durable species can probably be successfully substituted for them, and this can be done at a low cost.

In the treatment of greenhouse timbers several problems must be solved. For instance, it is desirable that the wood used in greenhouse construction be painted white in order that it will reflect as much light as possible. Consequently, a preservative must be used which will allow the treated timbers to hold a coat of white paint. Again, no preservative can be used which will in any degree affect the growing plants. It is probable, however, that these difficulties can be overcome, and the completion of the investigation will be watched with interest.

The investigations in wood preservation by the use of creosote, which is nothing more than the dead oil of coal tar and of zinc chlorid, is considered of such importance by the government that one branch of a bureau in the United States Department of Agriculture—the "Office of Wood Preservation" in the Forest Service—is given over entirely to the work of experiments in co-operation with railroad companies, mining corporations and individuals who desire to prolong the life of the timber which they use. Advice and practical assistance are furnished all who request it of the Forester at Washington.

Buy a Threshing Outfit On Our Co-Operative Plan

We Save You \$600 to \$1,000 On Latest and Most Improved Machines

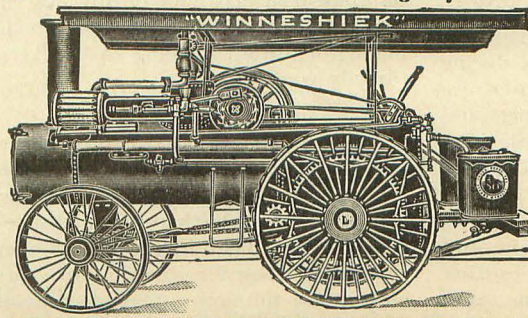
Our new plan of selling the famous, time-tried Winneshiek Traction Engines and Separators makes a Threshing Outfit so reasonable that every Thresherman can afford one.

We can't tell you in this "ad" about the wonderful time, grain and labor-saving features of the "Winneshiek" outfits (patented) or how marvelously liberal and attractive our offer is, but it is such a big

opportunity, that every Farmer and every Thresherman should get our Free Book and learn fully what it means to them—whether they have ever thought of owning a Threshing Outfit of their own or not.

The Winneshiek Engine is so simple and easy to understand that anybody can run it. No trouble, no danger.

The Winneshiek Separator has patented features which save time and labor, and actually put *10 to 15 per cent more grain into the bins*. Other separators carry this out in the straw. Think what even 10 per cent extra grain would mean to you in dollars each year.



There is no room to tell, even briefly, about these things here. They are all in the *Free Book*. Also such an attractive offer that you can't resist it.

Don't wait a minute—sit down right NOW and send a postal card for the BOOK and the OFFER. Pencil will do.

CASCADEN MFG. CO.
365 A Street, Grand Forks, N. Dak.
Factory and Home Office, Waterloo, Iowa

North Dakota Farmer AND SANITARY HOME.

Entered as second class matter in the postoffice at
Lisbon, North Dakota.

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Address all business correspondence to the Lisbon office.

Vol. 10 AUGUST, 1908. No. 2

The price paid for wheat is going to rule high and the farmer will find his returns for the year's crop larger than for a number of seasons.

Some of the first wheat sold in Minneapolis as high as \$1.27 per bushel. The outlook for flax is reported good and prosperity will reign again among the farmers of the state.

Now is the time to put a mulch around the trees and shrubs that were set out last spring. August and September are apt to be hard on trees. Lack of moisture at this time will pretty surely weaken them and another spring will find them dead.

It would be well to bear in mind that building blocks of cement or sidewalks of the same, when the water used in making the blocks is heavily charged with alkali are not likely to be of good quality. They will set slowly and the binding quality will be injured.

Now is the time when the cows and most other animals at pasture would be benefited by a little green corn fodder, oats, millet or other feed. This will keep the animals on the gain during the fly period, when the pastures are apt to be a little short. The pigs and poultry should be well fed to push them to early maturity and finish them for the market.

Manures are coming to be more and more used. Our best farmers caution against too heavy dressing at one time. They say that ten loads of manure is as

much as should be added at one time. Thus get over more land and come back oftener. Too much manure, they say, causes a rank growth of weak straw, which fails before the crop is matured. What is your experience, reader?

Two valuable papers presented at the National Pure Food convention condemned bleaching. One discussed the matter from the chemical and physical standpoint, the other from the millers' point of view. These papers will have a wonderful influence in shaping a healthy public sentiment at this time, and the East is fast waking up to the evils. The bakers are also condemning the process and soon another victory will be won.

If the millers of North Dakota are wise they will at once discontinue this practice on the new crop, advertise the fact to the public and stand for right. It would place their flour in the front. Put right on the sack: This flour is not chemically treated or bleached. It is made from the celebrated North Dakota hard spring wheat.

Where are the mills with the courage to lead in this and push the North Dakota product to the front, where it belongs?

This season we hear considerable about winter wheat and many farmers are disposed to make a trial to see how the crop will stand the winter. It would seem best to go slow and see whether the wheat does not badly winterkill when there is little snow, as often happens. Our farmers of experience recommend sowing some barley with the winter wheat. This will come on fast, make a good fall stand and falling over the wheat protect it and hold the snow.

The prospects for durum wheat look brighter this fall than ever before. There is no question but what wheat flour from good durum wheat is most excellent for bread making. It may not make so large a loaf as the fine wheat flour, but it is of better average flavor, holds the moisture better and for home use is good enough for the writer at any time. It is always better than bleached flour of any description. It is said that the foreign demand for durum is going to be exceptionally good this year.

While the crop harvested may not be fully what was expected two months ago, nevertheless, the yield will average better for the state than in the past few years. The wheat in the valley averages better than for a number of years, altho not a full crop. Outside the valley, in some places, the yield will be good

but in other localities very poor. Local showers and character of the soil are determining factors and the crop will be spotted. In a state of such an area as North Dakota possesses we could not expect otherwise.

Early plowing means the killing of many weeds and getting the land in good shape for the crop of 1909. This is very important for weeds are more on the increase in the farm lands of the state than ever, and everything should be done to get rid of the pests. Spraying with iron sulphite will destroy many weeds, but this done will not insure clean fields. Better tillage than in the past is necessary and a system of rotation with more stock and dairying thru-out the state.

Following the report of the committee the association above referred to passed the following resolutions: *

Resolved, That this Association is unalterably opposed to the bleaching of flour by oxides of nitrogen or other chemicals."

This shows where the consuming public stands on this important question, and the millers should take warning before they are unnecessarily injured by advertising.

Well, did you have a good garden this summer, and was it near the house? If so, what do you think of its value? For nearly two months now the writer and his family have eaten hardly any meat—all has come from the garden. Peas, beans and corn have taken the place of meat and no one has missed it. Indeed, all are better for not eating the meat at this time. Peas, well cooked, fresh from the garden, is my favorite dish. Not poor, hard, indigestible, improperly cooked peas, but fresh, juicy and palatable. Too many people pick the peas when convenient, let them dry out, shell them and then let them soak in cold water for some time. These are not good in flavor. Shell the peas fresh and put them on to cook and do not let them stand in cold water at all. If possible, use soft water for the cooking. Beets, onions, lettuce, cucumbers and greens have all had their place in our daily diet, but meat is not used during these warm months.

The North Dakota Durum Wheat Association, thru its publicity bureau, is going to have a booth in the main building at the Minnesota State fair, to be held August 29 to September 5, inclusive.

The Bureau of Publicity is composed of M. O. Hall, Mohall, Chairman; T.

See Our Big Offer on page 2.

N. Oium, Lisbon; O. G. Major, Hope; M. N. Johnson, Petersburg; N. G. Larimore, Larimore.

These gentlemen are very enthusiastic as to the future of durum wheat. Kubanka (durum) wheat was imported from Russia by the Agricultural Bureau at Washington and is well adapted to the great plains, resisting drouth and hot winds and best adapted to lighter soils.

Prof. Ladd, of the Agricultural College, has demonstrated by scientific tests that the durum flour contains more gluten (protein), which is the body builder, repairing waste body tissue, than the ordinary wheat bread.

The present Minneapolis price offered for durum wheat grading No. 1 is 93 cts. while No. 1 Northern is quoted at \$1.22, a difference of 29 cents against durum wheat, when in reality a bushel of durum makes more flour and better flour than a bushel of No. 1 Scotch fife, figuring the same grade.

Prof. Carleton, of the Bureau of Agriculture at Washington, who has charge of the Cereal Bureau, publishes in Bulletin, No. 70, that may be had for the asking, shows how 200 loaves each of durum and spring wheat flour were made by a prominent Washington baker under

similar and ideal conditions, and the same were sent out to competent judges of bread all over the United States.

Of the criticisms received 74 percent were marked in favor of the durum.

Mr. Schinkel says that on the whole the durum loaf presented a far better appearance than the Minnesota patent. It was crusty, rich and brown, a compact loaf. It was moist, at the end of four days, when the Minnesota loaf was dried out, and everybody praised the excellence of the durum bread's taste.

The North Dakota Durum Booth will serve free, at the Minnesota State Fair, to all comers, rolls and bread made from durum flour, ground from durum wheat raised in North Dakota. A thoroughly experienced demonstrator, who has eaten no bread but durum for months, and who says no woman will ever eat a loaf of other bread, once she has tried durum, will be in attendance at the booth.

It is the hope of the committee that all North Dakotans, and especially the housewives, and all others interested who attend the Fair, will make it a point to visit the North Dakota Durum booth, get a free lunch and gather all the facts possible pertaining to durum flour.

These buyers know a good horse when they see one, be sure of that. Many of our most successful horse breeders use nothing but ABSORBINE, relying on it to remove all blemishes.

This ABSORBINE is familiar to you all, as it has been on the market a great many years and is used by all horse owners who appreciate the value of having a preparation on hand at all times to kill pain, stop lameness, remove blemishes, etc. It is manufactured by W. F. Young, P. D. F., 233 Monmouth St., Springfield, Mass., who is also an enthusiastic horseman and willing at all times to help out brother horse owners needing advice on the care of their animals.

We are in receipt of a copy of the premium list of the Northwestern Livestock Show and would call your attention to the fact that the stock must be the property of the exhibitor for at least sixty days before it is shown."

We are calling your attention to this as you may like to know the exact conditions under which stock can be entered.

There is no question but what most of the exhibitors who will have grain-fed stock have already started to shape this up, but in regard to feeders and stockers, and grass-fed cattle, for which you will note some excellent premiums are being offered, they may not have secured the amount necessary to insure their having full carloads of 20 heads in each class.

Few people realize the improvements that have been made in the gasoline engine during the past few years. The simplicity and reliability of the present engine of standard manufacture appeals to every one in search of motive power. Your careful attention is called to the advertisement of the Lackawanna Mfg. Company. Their treatise on gasoline engines is worth the small charge they make, whether you are using their make of engine or not. Those who live in the vicinity of Lisbon have seen this summer as fine a demonstration of excellence in gasoline engines as one could wish. The little five-horse power engine in the pleasure launch, run by amateurs, has made already two score trips without a miss.

An expenditure of more than \$100,000. will be distributed among the successful exhibitors and for the promotion of livestock interests in connection with this exposition. The livestock department of the Alaska-Yukon-Pacific Exposition has completed the "Preliminary Prize List" for the exhibition of the various breeds of livestock during September of 1909, a copy of which will be forwarded to your address on application to F. A. Welch, Salem, Ore

AMONG OUR ADVERTISERS.

If any farmer still has any doubts about the practicability of the steam traction plow for average and small farms, as well as for the large ranches, he will have that doubt removed by sending for the catalog on "Plowing



with a Traction Engine," issued by Reeves & Company, Columbus, Ind.

The above illustration, a typical plowing scene in Western Kansas, is taken from the Reeves Catalog and is one of many plowing scenes in this book, all taken from photographs.

Reeves & Company are large manufacturers of traction engine plows. Their catalog is the best exposition of the place of these plows in the present day farming we have yet seen. It shows them at work in all kinds of soils over ridges and on rolling and uneven ground. If you have not actually seen one of these plows at work, you will be surprised at how it handles itself and the nice kind of work it does around short turns, over knolls and thru hollows, in the stubborn soils and where there are obstructions.

Send for the Reeves catalog and learn what traction plowing means for you. See how many acres you may expect to plow in a day in old ground or breaking heavy sod under varying conditions. Reeves & Company have a long list of letters from users all over the country. They are all in the catalog and they tell of traction plowing under about all the conditions that are to be met with. It is a handsome book, the pictures are large and the whole story is interesting to farmers. A copy will be mailed free if you mention this paper.

Now is the time to get your stock in A-1 condition, so that when the busy, prosperous horse buyers are at your farm or ranch, you can show them clean, sound stock and get a price accordingly.

Pure Food Department.

All Matters Pertaining to Foods will be Discussed in this Department

REPORT OF NATIONAL COMMITTEE ON PURE FOOD

The cause of protection of our people against the fraudulent branding of food, and the use of injurious substances in food, has made marked strides within the last year. This has come about thru two agencies:

First: The officials charged with the enforcement of the National Food Law have settled many vexed questions to the satisfaction of consumer, dealer and manufacturer and the question of what is a proper label for a given food is fairly well determined.

Second: The state food laws of many states have been remodeled and as a rule improved, so that state control of food products may be said to be in a very much more satisfactory condition than ever before. The individual states acting under their police powers have shown a disposition to legislate more in harmony with the spirit and letter of the National Food Law.

The question of the use of preservatives in food products is still the burning one and much misunderstanding exists regarding it.

Briefly, the difference between the federal food authorities and manufacturers has been this: The Board of Food Inspectors claims to have found that the use of certain preservatives is injurious, and has attempted to prohibit their use. On the other hand the leading scientific men connected with the first universities of this country have advised manufacturers that in their judgment the use of some preservative in the small quantities necessary is not only not injurious to health, but often to be preferred to foods prepared without such an article. From this confusion and disagreement there seem but two avenues of escape; either to secure the appointment of an official scientific review commission, or submit the question in a contested suit in the courts. In the first case the decision would be the work of competent experts, within the scope of their ability and training, but in the second, the question of whether a certain preservative was wholesome, or unwholesome and injurious, must be determined by the ordinary jury.

Members of your committee, unanimously believing that the interests of all parties, including the consumer, will be best served by the appointment of a

scientific commission, sought an interview with the president of the United States and laid the question before him. After carefully going over the whole subject, the president has authorized the Secretary of Agriculture to appoint such a scientific review commission. The secretary has acted under this authority and his selections embrace the leading scientific experts connected with our first educational institutions.

Respectfully submitted: Walter H. Williams (chairman), R. A. Badger
Walter M. Lowney, Willard Ohliger.

FOOD MATTERS

The following is culled from the address of Prof. Ladd as President of the Association of State and National Food and Dairy Department at their annual convention at Machinac Island.

During the past six years there has been created a sentiment among the people for pure foods and truthful labeling, and we have seen marked improvement in the character of the foods, beverages and drugs furnished to the people of this country. Six years ago our preserves, jellies, and jams were largely adulterated and misbranded, made from apple stock and waste fruit products, often containing starch, paste and mucilage, colored with aniline dyes, preserved with salicylic acid, sweetened with glucose and saccharin and the whole falsely labeled. Our canned corn, almost without exception, was bleached with sulfites, preserved, and sweetened with the coal tar sugar-saccharin, our peas and string-beans frequently contained copper and alum salts and often, contained chemical preservatives. Our meats were embalmed with chemicals, and some of the canned products contained little besides gristle, connective tissue and waste matters, seasoned and flavored, but sold as potted ham, chicken, etc. Our sorghum syrup came largely from glucose factories, while the maple syrup was almost wholly an imitation product, worth fifty cents a gallon and retailed for \$1.50. Our strained honey was largely flavored syrups and glucose. Our candies were made from glucose, containing sulfites, to which further sulfites were added, colored with coal tar colors, many of which were known to be harmful, and flavored with chemicals or synthetic flavors. Our whiskies, brandies and wines, most generally sold even in drug-stores, the

good Lord only knows what they did contain, but our chemists have shown that they seldom contained real whiskey. Our cider vinegars were unknown to the apple family. Our spices were but a semblance of the real thing, made, as they were, from corn-meal, cocoanut shells, olive stones, and other waste products. Not a few of our drugs, drug preparations, extracts, etc., contained wood alcohol, known to be a deadly poison. Cereals and chicory were the basis of much ground coffee. Lemon and vanilla extracts were largely imitation products and put up with wood alcohol. Many of the preparations dispensed at the drug-stores varied from 25 to 150% of the U. S. P. strength; and fully 75% of the patent medicines were fakes, pure and simple.

But why dwell upon this longer than to show what has been accomplished thru the enactment of state laws and their enforcement. Today these conditions are largely changed. Pure foods, pure drugs of proper strength and truthful labeling are in a large measure being realized, and this Association has done its full share in making possible this changed condition and in creating the healthy public sentiment which has sprung up in all parts of our land.

SULFURING OF FRUITS

What shall be the attitude of our members toward the dried fruit problem, as it is now presented to us? Why should we consider it proper and permissible to sulfur dried fruits any more than meats, canned corn, wines and candy? It will be a very difficult matter to prove a preservative injurious in one food product and not in another. Why certain industries should be favored by being permitted to use a preservative and others not, might be hard to comprehend. If we take steps to put a stop to this practice of sulfuring fruits, I maintain that in the end the industry will be immensely benefited and not harmed. The experiments carried on by the Department of Agriculture at Washington, D. C., have clearly demonstrated the deleterious effects upon the human system of sulfur di-oxide, if such further demonstration was at all essential. Under the National Law it would seem that there could be no valid reason for longer permitting an evil which, at the present time, is more general than it was before the enactment of the National Law. Why should the officials of North Dakota, for instance, be expected to tolerate an abuse, simply because the National Law is not being enforced where its terms are clear and unmistakable and the findings of the government in harmony therewith?

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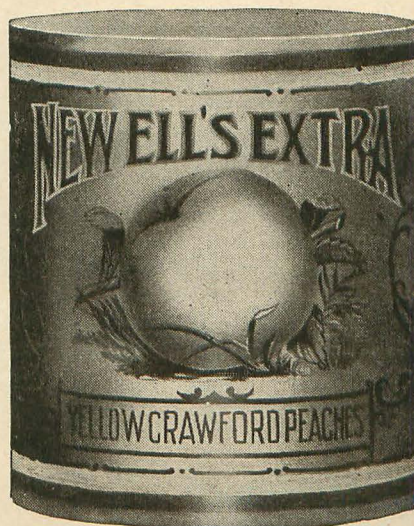
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That the sulfur compound in the fruit is wholly changed or driven off in cooking, as maintained by the advocates of this process, is not correct, and, like Glaubers and Epsom salts, they are not natural or desirable food adjuncts, even when taken in minute quantities. The necessity for sulfur bleaching of fruits, to my mind, does not always suggest good sanitary conditions in dry and caring for the fruit any more than the demand for the use of benzoate of soda indicates fresh, wholesome fruit in the preparation of the catsup. I hope the Association will give careful consideration to this matter, and formulate a course of action to be generally followed by the states.

Alum and Its Use

It is generally recognized that alum salts are not desirable food products, nor are they longer essential in the preparation of food products. It is true that the use of alum in the preparation of pickles does not make necessary as great care as where they are not employed, but the adoption of improved methods will enable us to get away from its use. The Resolution passed by the St. Paul Conference of Northwestern Commissioners expresses the general sentiment as follows:

"Resolved, That the use of alum or any other aluminum compound in

prepared fruits, vegetables and condiments, is injurious to health and unnecessary, and should be prohibited."

Since it is essential that the way be paved to make ready for changed conditions, I recommend that the educational work, at least, be now begun, and the use of aluminum salts not permitted in peas, beans and like products, and, after the present year, prohibited in the preparation of pickles or any other food product.

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Home Affairs

Katherine C. Neilson, Editor

JELLIES

"Why does not my jelly harden?"

"What causes my jelly to candy?"

Pectin, Pectose, Pectase

In all fruits, when ripe or nearly so, there is found **pectin**, a carbohydrate, somewhat similar in its properties to starch.

It is on account of this substance in fruit juice that we are able to make jelly. When equal quantities of sugar and fruit juices are combined and the mixture is heated to the boiling point for a short time, the **pectin** in the fruit glutinates the mass.

It is important to understand when this agent is at its best.

Pectose and Pectase always exist in the unripe fruit. As the fruit ripens Pectase acts upon the Pectose, which is insoluble in water, converting it into pectin which is soluble.

Pectin is at its best when the fruit is just ripe or a little before. If the juice ferments, or the cooking of the jelly is continued too long, the Pectin undergoes a change and loses its power of gelatinating.

It is, therefore, of the greatest importance that the fruit should be fresh, just ripe or a little underripe, and that the boiling of the sugar and juice should not be too long.

Fruits vary as to the quantities of sugar, acid, pectin, and gums in their composition. Some of the sour fruits contain more sugar than do some of the milder flavored fruits. Currants contain four or five times as much sugar as the peach. The peach does not contain so much free acid and it does contain a great deal of pectin bodies, which make the acid, hence the comparative sweetness of the ripe fruit.

An acid fruit is the most suitable for jelly making, tho in some of the acid fruits, the strawberry, for example, the quantity of the jelly-making pectin is so small it is difficult to make jelly. If some currant juice is added, a pleasant jelly will be the result: Here is a list of the best fruits for jellies.

Currants	Crab-apple
Apple	Quince
Grape	Blackberry
Raspberry	Peach

Juicy fruits should not be gathered after a rain. Large fruits, such as apples, peaches and pears must be boiled in water until soft.

The strained liquid will contain the flavoring matter and pectin. In the case of the large fruits a fair estimate is three quarts of strained juice for eight quarts of fruit and about four quarts of water. If the quantity of juice is greater, boil it down to three quarts.

Apples require 4 qts. of water to 8 qts. of fruit, peaches and plums 3 or 3½ qts.

The jelly will be much clearer and finer if the fruit is simmered and not stirred during the cooking.

Strain thru a double cheese cloth; thru flannel is yet clearer.

If the fruit contains a high percentage of sugar, the quantity of sugar added should be a little less than the quantity of fruit juice. In a season when there has been a great deal of sunshine and heat there will be more sugar in the fruit, consequently, one pint of currant juice will require but three-quarters of a pint of sugar.

Another cause of the jelly's crystallizing is hard boiling.

Currant Jelly

To one pint of juice add one pint of sugar, stir until sugar is dissolved. When it boils up skim and draw back; skim the third time, fill glasses and set in the sun. Cover when cold with paraffin paper dipped in white of egg and water or paper saturated with brandy, whiskey or alcohol.

Raspberry-Currant jelly made same as currant.

Blackberry the same, using currants.

An acid grape is the best for jelly—wild grape the best of all grapes.

Plum Jelly

Use underripe plums. One qt. of water for each peck of fruit and proceed as in currant jelly.

Use pieplant juice for sub-acid fruits.

Blueberries canned or cooked for table use in pies are greatly improved with this acid.

Choke cherries with several other varieties of fruit produce a rich jelly.

Marmalades—Purees and Coddling come later in the treatment of the larger fruits.

DAKOTA DROUGHTS

Interesting and Timely Lecture by Prof. Shaw at Devils Lake Chautauqua

At the Devils Lake Chautauqua one of the most interesting features to North Dakotans was an address by Prof. Thomas Shaw, formerly of the N. D. Agricultural College, upon the subject: "Will the Dakotas Become Dry Again?" Prof. Shaw be-

lieves, and statistics support his theory that they will, but the results will not be felt so disastrously, because cultivation of soil increases and conserves the moisture.

Prof. Shaw said in part:

"During those dry years which in some localities followed each other in some degree of succession, and which were more or less interspersed with frosts that destroyed the crop, many of the farmers in some parts of North Dakota moved away, abandoned virtually everything that they had. This proved singularly adverse to the settlement of North Dakota. It threw it backward more than a decade. It was not isolated settlers who moved out. In some places the settlers virtually abandoned areas scattered more or less eastward from Jamestown. The story of some of those settlers is pathetic indeed. Some of them brought considerable means with them. They walked out on foot in some instances after having bravely fought for two or three years against the odds of drought and frost. It seemed as though the elements had made common cause against them. One man who remained in a certain locality told me that had it not been for the bounty on gophers during two of those years, he does not know how he would have furnished bread to his family. This man is now the owner of good buildings and three-quarter sections of land; and North Dakota suffered even less than its southern sister.

What has happened since the lands have been abandoned? Why have the lands again been settled upon? Almost every foot of available land in North Dakota is now in the hands of private owners. Much of it has been settled upon. The whistle of the ploughman is heard even westward from the Missouri to Montana in North Dakota, and from legions of happy homes the glad song of an abundant harvest completed goes up every year from grateful hearts. In South Dakota settlement is pushing out all along the new line of the Milwaukee west of the Missouri. It is pushing out southward and westward to the Montana line. Even the bad lands will no longer be the home of the rattlesnake and the coyote. They are being turned into good lands on which flocks and herds will graze in summer and in the winter they will feed on food raised in the garden lands that lie between the hills, and yet there have been decades with less rainfall than the first disastrous drought but the dire effect was not felt so greatly by the settlers.

If the annual precipitation in the ten year period following 1885 was but little less than the same during the next ten year period, why did the dis-

tress during the first period lead to the abandonment of farms, and why during the next ten year period have the crops been on the whole good? The difference in the outcome would seem to be owing to two reasons. The first is that during the ten year period following 1885 two very dry years followed in succession. The second is that during the second period much more of the land had been broken up. More rain had been absorbed by the soil to be given out thru transpiration in the growing crops, and therefore there was more moisture in the air. A third reason may be found possibly in the character of the precipitation. When rain comes in downpours rather than gently and moderately, much more of it runs away and is lost. To some extent that may have been a characteristic of the rainfall during the ten year period following 1885.

While dry seasons may and will come again, they will never produce results so dire as they did in former years. One of the principal reasons for this hope is the increase of moisture in the atmosphere thru transpiration from the green crops that cover the earth. This influence will increase, for even now in some parts of Dakota not more than 5 to 10 per cent of the prairie has yet been broken. The second principal reason is that the modification that is possible in tillage will conserve moisture much better than it was conserved in former years. Sending down the plow increases the area in the soil for drinking in moisture, and an occasional subsoiling will further aid such capacity. Growing cultivated crops not only enables the soil to hold the moisture that falls during the season, but it aids it in storing up moisture for the crop of the next year.

It would be interesting to know on how few inches of rainfall a fair crop

of wheat even could be grown in Dakota, on land prepared for such a condition. If it shall turn out that winter wheat can be grown successfully in far western North Dakota, and I believe that it can be thus grown, a good crop could probably be possible on 6 inches of rainfall.

Another question often asked is, "will frost trouble us, as in the past?"

Unhesitatingly I answer, no. Some season's frosts may do harm, but the frequency of these will grow less. The breaking up of the land and the draining of sloughs have a tempering influence on climate. It has been the history of all countries which have been afflicted with frosts during the growing period, that as soon as cultivation becomes general, the frosts come less late in the spring and less early in the autumn. The period without frost in Dakota will come to be fully one month more on the average than when Dakota soils were first tilled.

In mixed farming we have our greatest protection. The wisdom of mixed farming may be argued from many standpoints. It will be referred to here from only one, that is, the standpoint of its being a safeguard against dry seasons. A farmer in the one case has only wheat grown in the ordinary way. In the other case he has wheat grown after corn, he has a large area of corn, and he has a large field of alfalfa, with a proportionate amount of live stock. In one of those dry years, the former will be undone, whereas the latter may get thru the season without loss. Handle the lands of Dakota as they may and ought to be handled, and the production of Dakota will continue to be the envy of other states.

Offer on Page 2: Hurry!

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Livestock Department

PROF. W. B. RICHARDS, Editor

A SUCCESSFUL STATE FAIR HELD THIS YEAR AT FARGO

North Dakota people can justly be proud of the State Fair which the state held at Fargo July 20th-25th. There are few states that have such a well equipped fair grounds and the necessary enterprise back of it to hold a fair such as was held at Fargo this year, that is no older in years than our state. The grounds presented a very attractive appearance and an animated aspect all week. The well planned arrangement of the buildings and their attractive architectural design, is a very commendable thing in favor of Fargo becoming the permanent home of the state fair. It also reflects great credit upon the management of the fair from its original inception.

Every building on the grounds has a cement walk leading to it with the exception of the race horse barns. But few state fair grounds are provided with this convenience, and what might be called an absolute necessity, if people are going to get around the grounds to see anything during wet weather. During the past year a Merchants' Pavilion was added to the group of buildings on the grounds at a cost of \$14,000. This is a very unique structure in its arrangement. It is built in the shape of a quadrangle with a court in the centre, and in the middle of the court stands a handsomely arranged place for a floral display. The building is divided into 54 booths all opening into the court. The merchants display their wares in these booths in a very tasty manner.

The races were unusually good this year. While they do not add anything of educational value and often detract from the educational portion of the fair, they are necessary to hold in connection with a fair in order to make the fair a financial success. The people of the cities and towns will not attend a fair for its educational features and the rural population expect both.

The farm machinery exhibit was very large and the tract of ground allotted to the threshers and engines was a specially noisy and animated place. Nearly every manufacture of this class of machinery was represented.

The women's building presented an attractive appearance and the school exhibits were paid much attention and elicited much favorable comment. The display, in what was the old Merchant's building, made by the Agricultural College was very interesting. It showed

the different line of work that is being done at this institution. Nearly every one said that this display was made to realize the importance of the College in imparting this useful knowledge.

The dairy exhibit was larger and more attractive this year than formally, made possible by the installation of a large refrigerator to care for the dairy products. The exhibit was in charge of Ass't Dairy Commissioner Flint, who deserves considerable credit for the success of the exhibit.

The live stock show was large and the quality was good. In fact the improvement in the quality of the stock show over those shown at the first state fair held since the change of location is quite marked. They are shown in better bloom. Considering the newness of the state the showing of live stock made by the breeders of the state is remarkably good, especially of beef cattle. Dairy cattle, however, are not numerous. The swine and sheep exhibit was much larger this year at this fair than any formerly made at any fair in the state. The number of both swine and sheep show has been very limited considering the number and possibilities in raising them in the state. A more extended account of the live stock exhibit will follow.

SECOND ANNUAL SHOW

The Northwestern Livestock Association which entered the field with a successful show at the Union Stockyards in South St. Paul last year, will present its second annual show at the same place November 17th to 20th, 1908.

This show is conducted in the interests of the farmers and feeders and is not open in competitive classes to Agricultural Colleges, with its course of lectures and demonstrations it is designed to furnish much valuable information on the subject of animal husbandry.

The classes in the premium list cover individuals, pair lots and car lots in cattle, hogs and sheep. There are six prizes in each class for the single cattle, and five prizes in each class for swine and sheep singles; while in the car lot division there are four prizes for all kinds in each class.

In all there are nearly \$7000 in premiums; and the small farmer and feeder has a good chance to win some of these prizes.

The territory of the show is limited to Minn., N. Dakota, Montana, the north-

ern part of South Dakota and the northern part of Wisconsin.

Also there are no classes in the premium list for breeding stock. Therefore, the farmers and feeders of this territory will not be brought into competition with the professional herds shown at the big fairs.

The management of the show has felt that there is a field for it in this territory, and believes that the farmers and feeders will readily appreciate the advantages that will accrue to them thru the building up of a show of this character.

CATTLE SECTION

Shorthorns

The show of Shorthorns was one of the best that has been seen heretofore at a North Dakota fair. It was not only large, but the quality was exceedingly good and it was a great credit to the breeding industry of the state.

In addition to 4 full herds shown by North Dakota breeders C. E. Clarke of St. Cloud, Minn. showed two entrees in nearly every class, which means they showed two herds, one of which was at Brandon, and the other at the Winnipeg Industrial the week preceding. The cattle from this great breeding establishment are up to their usual standard, and the farmer who attended this fair had an opportunity to see as good shorthorns as could be seen at any fair in this country. The Clarke entrees won first and second place in most of the open classes, with the entrees of W. W. Brown of the "Elms" capturing the rest.

Bapton Favorite, the bull that has been at the head of the Clarke herd during the past two seasons is out in his usual bloom and was made grand champion bull. Superbus stood next to him in the aged bull class. The grand champion bull in the North Dakota classes was Minas Beau owned by David Clark & Sons, Bottineau. This bull has developed remarkably during the past year, and is now a magnificent bull; altho his head may be faulted because of a lack of masculinity.

The grand champion cow of the open classes was Dorothea 2d of the Clarke herd. This is the cow that was so successful as the aged class thruout the circuit last year. She is not in the form she was last year, however, but no doubt will be before the Hamlin show. This honor in the North Dakota classes was bestowed upon W. W. Brown's two-year old heifer Choice Jean, a very smooth heifer with lots of quality; but with not as much scale as some have.

"The Elms" also won the junior champion in North Dakota classes on Irene Avalon a junior yearling heifer. S. Fletcher won junior champion bull in the

state class on Morning Star, his senior yearling bull.

The exhibitors in full were C. E. Clarke St. Cloud, Minn.; W. W. Brown, Amenia, N. D.; David Clark & Sons, Bottineau, N. D.; S. Fletcher, Matteson, N. D.; E. C. Butler, Cooperstown, N. D.; N. Olsgaard, Kindred and W. J. Turnbull, Harwood, N. D.

The judges were Prof. D. A. Gaumnitz, of the Minnesota Agricultural College and Geo. Waters, Winedon, Minn. They also judged all the other beef classes and their work was very satisfactory to the exhibitors.

Aberdeen Angus

The competition in this breed lay between the "Fairview Farm" of Frank Sanford, Rogers, N. D. and the "Bonnie Brae" of Geo. A. McFarland, Valley City, N. D. Both herds are a great credit to this popular breed. The Fairview herd is well fitted, and has been strengthened by some purchases from out of the state, which made it possible for it to win the biggest share of the first places. Considerable credit is due the showing made by the McFarland herd in view of the fact that most of the cattle shown were of their own breeding.

Herefords

There were no Herefords shown this year, which was rather contrary to our expectation, considering the good showing made by this breed at former state fairs.

Galloways

C. E. Clarke, St. Cloud, Minn. had on exhibition a herd of his breed with no competition. This herd added much to the cattle show.

Fat Cattle

Several of the breeders have brought out some fat steers this year, which is a very commendable feature, for it shows what the finished product of the commercial end of the business should conform to. Grade steers sired by pure bred beef sires will show the farmer the advantage in using good sires.

Frank Sanford introduced an innovation this year which can be profitably followed by others and that is using placards to show the breeding of the steers the gains made and other items of educational value.

The championship for fat steers was won by a grade Angus shown by Mr. Sanford.

Red Polled

H. N. Tucker, Courtenay, N. D., exhibited a herd of Red Polls and met with no competition. This herd could stand some more fitting to show to best advantage.

Dairy Cattle

The only dairy breed on exhibition at this fair was the Jerseys. Two very fine herds of this breed vied with each

other for honors. The Edgewood Farm herd, owned by J. W. Smith, Fargo and C. E. Batcheller's herd of Fingal. Both herds were shown in fine bloom.

The Edgewood Farm herd is now under the efficient management of S. A. Moore and good results may be looked for from this herd in the future. The Batcheller exhibit is a good example of what can be done with a small beginning, for the whole herd exhibited was produced from one cow, Lucy Brant, and her descendants and she still possessed enough vigor to stand second in the aged cow class.

The Edgewood Farm had the grand champion bull and cow. Raleigh Bov and Beauty Ann. C. E. Batcheller had the first prize aged herd, young herd and won with get of sire and dam.

The dairy cattle and Red Polls were judged by Prof. J. H. Shepperd in an efficient manner.

HORSES

Percheron

The Percheron exhibitors were Burgess and Lukyn, Fargo; O. O. Ellison & Sons, LaMoure; White Bros., Valley City and Olis Larsen, Hawley, Minn.



A Group of Pure Bred Percherons.

This exhibit was a great credit to the Percheron breeders of this section of the country. There were several individuals shown that are top notchers. Burgess & Lukyn had the first prize aged stallion and the Ellison's the three-year-old, which was made sweepstakes stallion Burgess & Lukyn won 1st and 2d in two-year-old class and 1st in the yearlings.

White Bros. shared honors with the Ellisons in the mare classes winning 1st on three-years-old mare and 2d on two-year old. Ellison's won everything else in the mare classes. Their sweepstakes stallion Charlatan and sweepstakes mare Adrienne are sired by Calypso and they are a fine pair. The draft horses were judged by Prof. Richards.

Burgess & Lukyn showed two aged Shire Stallions that possessed considerable merit. They also exhibited one Belgian that had just landed with their new importation.

Light Horses

G. W. McIntyre, Grafton and Sam Crabbe, Fargo showed some very good Standard Breds. Mr. Crabbe's Al Logans, a grand son of Allerton was sweepstakes stallion and Mr. McIntyre's Bonnie Axford sweepstakes mare.

SWINE

Poland Chinas

The Poland China exhibit was large this year and meritorious as well. The exhibitors were Axel Peterson, White Rock, S. D., Edgewood Farm, Rea Bros., Fargo, and Harding and Pugh Winnebago, Minn. Peterson had the sweepstakes boar and sow and aged herd. The Edgewood Farm had just started to breed Polands and they made a fine showing for the length of time the herd has been established.

The awards were as follows:

Aged boars—1st Peterson, 2d, Edgewood Farm, boar 16 months and under 2 years—1st, Harding & Pugh. Yearling—1st, Rea Bros. Six months and under year—1st and 3rd, Peterson; 2d, Harding & Pugh. Under six months—1st Edgewood F, 2d, H. P., 3rd, Rea.

Breeding Sow—2 years and over—1st, Peterson, 2nd, Rea, 3rd, Peterson. Sow—18 months and under 2—1st, 2nd and 3rd, Edgewood F. Sow 1 year and under 18 months, 1st, Rea, 2nd, H. P., 3rd, Edgewood Farm. Sow over 6 months and under 1 year—1st Peterson 2nd H. P. Sow under 6 months—1st and 2nd, Rea, 3rd Peterson. Aged herd, 1st, Peterson, 2nd, Edgewood Farm, 3rd, Rea. Young herd—1st, Peterson, 2nd, H. P., 3rd Rea. Sweepstakes boar and sow, Peterson.

Duroc Jerseys

The duroc show was of exceptional merit space will not admit giving all the awards. D. J. Valan Rustad, Minn. was the largest exhibitor and captured the majority of the premiums. Fuller and Van Dom of Chatham, Ill. also made a good showing. W. H. Workman and Stanley Thompson, Ayr, were the other exhibitors.

Berkshire

The Farmer Farm, Farmington, Minn. made an attractive exhibit of this breed the only competition was a boar and sow shown by J. O. Hertgaard, Kindred, N. D.

Yorkshire & Chester Whites

A. A. Devine, Mapleton made a small show of Yorkshires, which were good representations of the breed. Wm. Hagemeister, Argusville, N. D., exhibited Chester Whites.

Sheep

The sheep show included two Shropshire flocks owned by Blanchard Bros., Winnebago, Minn. and H. J. Cross, Childs, Minn., and one Hampshire shown by Blanchard Bros.

LICENSED STALLIONS IN MINNESOTA

A review of the records of the Stallion Registration Board for the last year reveals several very interesting points in connection with the horse raising industry in Minnesota. The law requiring the enrollment and licensing of stallions was passed on April 25th, 1907. The Board was organized in May, and during the first year of its existence has licensed 8,959 horses. 1,110 or 37.2 per cent of these horses are pure bred; 1,849 or 62.2 per cent are grades. Ninety-six horses have been refused license on account of unsoundness, which is recorded as transmissible and would be likely to affect the get of these stallions. It is estimated that twenty-five to thirty stallion owners have been advised by local veterinarians that their horses could not pass examination and application has not been sent for them. In all probability 125 unsound horses have been kept from service in the State this year.

The Percheron breed of horses leads all others both in grades and pure breds, with standard bred trotters second, and Belgians third in the list.

In some sections of the State there is slight opposition to the law due largely to local prejudices, or misrepresentation on the part of some prejudiced stallion owner, or other interested party. As a whole, the law is meeting with the approval of the horse breeders of the State. This is evidenced both by the large number of horses registered, and by the correspondence necessary in securing licenses. With only a few exceptions, the law is being obeyed strictly, some counties reporting only one or two still unlicensed.

Some misunderstanding still exists regarding Sections five and seven of the law relative to posters. The law requires a poster containing copy of the

license certificate on the door of every stable at which the horse is stood for public service. In many places these particular sections of the law are not being observed simply because the owners of stallions do not know that it is necessary. Where informed that this is required, there is little difficulty experienced in securing the posting of the licenses.

THE COST OF MILK PRODUCTION

A Vital Matter in Intelligent Dairying, But Usually Ignored by the Farmer Who Won't Bother with Accounts and Records. Cow Yield the Main Factor.

James Cheesman

The cost of milk production has been a fruitful topic for many months. It is not easy to obtain data from farmers who produce for large cities, or even small ones, for the best of all reasons, that few of them know very definitely

just what it does cost. It is well known by all who are closely allied to the milk industry that its cost is increasing, and that this increase has been steady for several years. The main reasons which are prominent in the public prints are high cost of labor and feeding materials; but these do not cover the ground entirely. The diminishing cow capacity, and the great variability in cow yields has far more to do with the recent conditions of supply than those of feed and labor costs.

Rather more than a year ago the facts, taken from three shipping points within

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Cures Strained Puffy Ankles, Lymphangitis, Bruises and Swellings. Lameness and Allays Pain Quickly without Blistering, removing the hair, or laying the horse up. Pleasant to use. \$2.00 per bottle, delivered with full directions. Book 5-C, free.

ABSORBINE, JR., for mankind, \$1.00 Bottle. Cures Strains, Gout, Varicose Veins, Varicocele, Hydrocele, Prostatitis, kills pain.

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That's what the De Laval shops have been doing since early in February, from seven o'clock in the morning until nine o'clock at night, with every available man, and new tools being added every week; while the material supplying shops have been running double force all day and all night.

That's the record of the De Laval shops in the effort to meet the doubled demand from every section for the new Improved 1908 DE LAVAL machines.

That's the showing which stands out alone and by itself, against every shop and every industry in America for 1908.

There's certainly a very good reason for it, and if you need a separator—either the first one or a good one in place of a poor one—it's up to you to find it.

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fifty miles of Chicago, each in a separate county, show very clearly the weakest point in the milk producing area. It is a significant fact that producers have retired from the business in much larger proportion in the older milk producing area than they did in territory beyond the fifty-mile radius. It is in this territory that reliance has been placed on other states to furnish cows, rather than to breed them for the business.

Most milk farmers who depend on the other man to breed their cows, are subject to great risks. It has always been a feature of the cow trade to bring into the milk field animals which were not needed on the farms which raised them. It is safe to say that 90 per cent of these cows are weak, and so the large army of farmers who buy them to convert valuable fodder and grain into milk, encounter many losses.

Within one hour's ride of Chicago one group of more than two thousand cows produced less than sixteen pounds of milk daily per head. In another county nearly seventeen hundred produced an average of only 18.3 pounds per day, while another group in a third county, of less than twenty-three hundred cows produced an average yield of over twenty pounds.

In these large aggregates were found every phase of farm practice. The common weakness on all but three of the 258 farms, was the absence of any mode of learning in detail the earning power of the individual cow. Feed was lumped, milk was pooled and the monthly milk check covered a multitude of errors.

Many efforts have been made to encourage the use of scales, and the Babcock test for gauging each cow's product. These attempts have borne little fruit, and so it happens that the only data of definite value must be drawn from the experiment stations within a few score miles of Chicago.

A few years ago one dairyman just beyond the Chicago milk line adopted the advice of the Illinois Experiment Station, and recorded his experience under their supervision. The facts here presented tell a graphic story, and suggest possibilities of economy, and profit, quite beyond the average incomes from milk cows.

COW YIELDS AND EARNINGS

	Lbs. Milk	8 Gal cans	Fat Tests	Lbs. Fat	Inc. %
1904.....	5,800	85.3	3.86	224	
1905.....	7,105	104.5	3.66	260	22.5
1906.....	8,057	118.4	3.89	307	13.4
1907.....	8,628	126.8	3.75	324	7.4
Totals.....	29,590	435.0	15.16	1115	
Aver..	7,397	109.0	3.79	279	

From this four years' work we learn that the head increased nearly 50 per cent, and these averages are in accord with the best ten farms out of 258 in the milk area of Chicago. This result came of using scales, Babcock machines, feeding balanced rations and caring for dairy cattle according to their needs.

An experiment conducted in Michigan with selected grade cows will add force to the weights and scales way of working.

The cows were bought in the fall of 1904, the plan of the work was to show the value of grading up, careful feeding and management. This herd of twenty animals was divided into four groups for breeding purposes. The first report was issued in 1906, and shows that twenty cows produced an average of 6258.9 pounds of milk, with a fat test of 4.08 per cent and averaged a profit of \$36.58.

It will be of interest to record the work of the best half of this herd.

THE WORK AND EARNINGS OF TEN COWS

Pounds Milk	8 Gal. cans	Fat Test	Profit earned over fo'd cost
8,113	119.7	4.45	60.61
7,607	111.8	4.84	60.29
7,259	106.7	4.25	47.31
7,681	113.0	3.53	44.50
6,872	101.6	4.12	44.08
7,092	104.0	3.73	44.01
7,423	109.1	3.76	42.81
7,066	103.9	3.77	41.83
7,114	104.6	3.93	38.87
7,144	105.6	3.86	36.79
73,371	1,080.0	40.24	461.10
7,337	108.0	4.02	46.11

Here is a well wrought practical lesson and shows what may be done with cows capable of producing over one hundred cans of milk per year of 300 days.

In this selection of ten cows, the average daily yield was about 24½ pounds for 300 days. The actual average of lactation was 324 days, which reduces the daily average to less than 23 pounds.

Hundreds are using the Persona on page 28.



Health for the Horse

Loosen up his hide and his intestinal system, purify his blood, drive out the worms, give him an appetite and power to digest and get the full value of all his feed. You can do all this by the systematic use of

PRUSSIAN HORSE TONIC

and have your horses strong, healthy and high strung. Mix with feed. Only a small quantity required. 1,200 measures in the big pail. Price only \$3.50 prepaid. Ask your dealer for the standard remedies,

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Write us what stock you own and we will send you our Horseman's Hand Book Free. Write today.

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Clover Hill Shorthorns

Young cows, heifers and bulls for sale. Herd headed by Imp. Ben Lomond 224418. Prices reasonable. Jas. O'Hara, Lanesboro, Minn.

ENVILLA STOCK FARM, COGSWELL, N. D.,

200 HEAD REGISTERED ANGUS CATTLE—Calves, yearlings, bulls and cows of the best breeding and lowest prices.

150 SHETLAND PONIES AND GRADES—Any color, size or weight.

300 ANGORA GOATS—Kids, billies and nannies.

250 REGISTERED HOGS—Duroc Jersey, Improved Yorkshire, Hampshire, Improved Chester White and Poland China. Bred gilts and young pigs.

5000 HEAD POULTRY—All varieties: Rocks, Wyandottes, Leghorns, Reds, Brahmas, Orpingtons, Houdans, Minorcas, Games, Javas, Hamburgs and Bantams.

GEES—Toulouse, Embden, Buff, Chinese, African and Canadian-wild.

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DUCKS—Pekin, Muscovy, Wild Mallard, Indian Runner and Rouen.

PEA FOWLS, PHEASANTS, PEARL AND WHITE GUINEAS, FANTAIL PIGEONS—Birds and eggs from above varieties. Some choice cockerels. Baby chicks one day old.

RABBITS, HARES, GUINEA PIGS, SQUIRRELS, COONS, ANGORA CATS, WOLF, FOX AND RABBIT HOUNDS. COLLIE DOGS.

Write us for complete price list of varieties. Remember we won 90 per cent of the Blue Ribbons the last two years at the State Fairs. Order your eggs for hatching, poultry and stock of

**ENVILLA STOCK FARM,
Cogswell, N. D.**

L. H. WHITE, Proprietor,

Here is a task which any one may learn. From the many examples in grading up cattle we may fairly hope for a scheme of improvement which would realize a scale of increase about equal to the following table:

Total					
Age	Lbs.	8 Gal. Fat	Value	revenue	
	Milk	cans	Test	an'ual milk & calf	
3 yr.	6,800	100	3.80	40.00	121.60
4 yr.	7,480	110	3.90	40.00	129.76
5 yr.	8,228	121	4.00	40.00	138.73
6 yr.	9,050	133	3.90	40.00	148.60
7 yr.	9,955	146.4	3.90	40.00	159.46
8 yr.	10,622	156.2	3.80	40.00	167.46

Tot. 52,135 766.6 23.30 240.00 865.61
Av. 8,669 127. 3.88 40.00 144.27

Not less than a dozen men are producing an average of 125 cans of milk per cow without the use of a pure bred bull, or the Babcock test, and scales. They do not know the earnings of individual cows, and are therefore pooling the lowest earnings with the income from the best animals. No one should be satisfied with less than one hundred cans of milk of standard quality from a heifer with first calf.

The policy and practice which made an advanced register possible will enable any milk farmer to establish a very profitable herd in five years. Who will take the lead? Boys and girls will find in this work lots of interest; and the work of the dairy will not be a grind to those who will start right. Correct thinking must precede all right action before any business can be made remunerative.—From The Farmer's Voice.

CHARRING OF FAT IN BABOCK TEST

By Geo. P. Grout

During the hot summer months there is always more or less complaint among the dairymen and buttermakers about the charring of fat or to be more exact, black specks in the fat column when testing. It is impossible to tell whether the black spots are due to the charring of fat or to black particles of curd floating around in the fat. This makes it almost impossible to read the test accurately if at all. The general instructions given in dairy texts recommend using weaker acid or using a little less. The results obtained by cutting down the amount of acid used when it is too strong, or has a sp. gr. higher than 1.82, are not always pleasing. It has been my experience in the laboratory as well as in the creamery that using a smaller amount of acid when testing in hot weather does not always give a clear

test. On a hot day the amount of strong acid may be cut down to less than 15 c. c. or until there is not enough to destroy the solids in the milk and still black spots will appear in the fat column. A very strong acid may be used success-

fully in hot weather, giving a clear amber colored fat with a perfectly clear demarkation between fat and water, if the samples and acid are set either in cold water or in the refrigerator until cooled below 60°.

Bonnie Brae Stock Farm

VALLEY CITY, N. D.

Offers for sale at price that will suit purchasers, a fine choice

ABERDEEN ANGUS BULLS AND HEIFERS, and SHETLAND PONIES

Our stock is bred right, priced right, our show record is not equaled in the Dakotas.

GEO. A. MCFARLAND, Prop.

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A few choice calves for sale from a well established herd. Address

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FOR SALE

5 Angus Bulls
10 Oxford Down Ram Lambs
100 White Plymouth Rock Cockerels

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This magnificent picture should be in every farm home. It is a delightful scene of a happy young farmer and his sweetheart, a beautiful incident in the lives of a great many readers of this paper. The picture is printed in brilliant colors; size 16x22 inches. No farm house should be without it. We want you to become a reader of

THE FARMER'S RECORD

a large practical monthly farm journal. As a special inducement we will send it four months on trial for 10c. If you will also send us five names of farmers we will mail you the picture "Sweet Sixteen." Be sure to send the names with the 10 cents because we cannot give you the picture without them.

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IN SERVICE:

Lottie Melia Ann's King. Several sons of this bull for sale.

Other registered bulls for sale.

IN SERVICE:

CHARMER LONG-FELLOW 2nd. Registered sons and daughters of this boar for sale.

SIRE: Melia Ann's King, the Famous \$15,000 bull.

DAM: Lottie Melia Ann, the cow with a record of 20 lbs., 2 oz. butter in seven days, 9250 lbs. milk in one year, 23120 lbs. milk in three years and dam of three tested daughters in the charm list.

SIRE: Premier Longfellow, the World's Grand Champion Boar.

DAM: Lee's Charmer Belle 3rd. No. 92797.

For pedigrees and information of these pure bred cattle and hogs write:

BOSARD FARMING COMPANY,

WARREN,

MINNESOTA

Poultry Department

By MRS. B. F. WILCOXON.

FAVORABLE CONDITIONS

The farm is the ideal place on which to raise poultry, and on the farm can be made the ideal conditions.

The man in the city has a small lot on which to do poultry raising, and he must keep his poultry shut up for a large part of the year for the sake of his own garden and that of his neighbors. At the best he is limited in the number of fowls that he can raise, unless he hires more ground and goes into the business as a commercial enterprise. The farmer has everything in his favor. He has the land required to give the poultry immense range, except during a short period in the spring. When his plants are starting he can permit his fowls to have free range. This means health, for the fowls are not shut up in a yard that soon becomes bare, nor are they confined to a house that must be cleaned every day because it is so small. They have the clean fields to wander over and have the exercise needed while they hunt the grasshoppers and other insects. They eat the tender leaves of the plants and hunt their own grit.

If the farmer believes them profitable and wishes to increase their numbers, he can do so with almost no thought of the extra work entailed. The care of the poultry comes in so easy with the other work of the farm that it is hardly noticeable. Many of our farmers are appreciating this fact, and we find that more attention than ever is being paid to the raising of poultry.

If we are inclined to doubt this we have only to consult the men who are making a business of raising birds for breeding purposes. They are finding the farmers to be their best customers and all say that their trade is widening.

A member of our family has 150 brown leghorns, which bring him in an income of \$2 per head above all expenses, an account being kept of everything.

It is the spirit of false calculations that ruins the poultry business. This is the way it works: If the income from 150 hens is so much, then the income from 300 hens would be twice as much. This ought to be the case, but too often it is not, because the care has not been the same. A large number of fowls can be profitably kept on a farm if proper care is taken of them. Then, too, the

farmer can sell some pure-breds to his neighbors and friends at a little more than the market price, because the breeding and the usefulness for future breeding purposes are worth something to the buyer. The farmer could also find a very great demand for eggs for hatching purposes, realizing a better price for his eggs.

We take greater pleasure, fancy and interest in chickens when we have pure-breds. Such flocks on the farm advertise themselves, as the people passing by the farm notice the uniformity, beauty and general excellence of your stock and they will engage stock and eggs for future use.

One who reads the poultry pages of some of our journals is lead to believe that it is only necessary to invest in an incubator and some fancy eggs to be on the road to wealth.

Now I believe there is no one thing that is capable of bringing about more failures, more discouragements and more financial loss than the poultry business. But if one goes at it right,—(Now some one may ask what we consider the right way.) Simply use common sense. As one lecturer said, "If you have not that, neither I nor the Lord can help you."

Now I do not mean to say that an incubator and pure-bred eggs are a fraud. On the contrary, I believe them to be an excellent investment. If you are ever induced to buy an incubator, don't expect every egg to hatch. If you hatch 50 per cent of the eggs you set and bring to maturity 50 per cent of those hatched, you have done exceedingly well.

Now any business to be successful must yield an income above the cost of conducting it. The poultry raisers in cities and small towns do succeed and purchase every bit of grain and feed, thereby teaching our rural friends a lesson in economics. If they can and do succeed, should not the farmer be pre-eminently the successful poulturer? Let us look at the conditions that surround the farmer: ample range for large flocks, an abundance of feed at the cost of production, insects, green stuff and grit; besides the meat that is so much talked about is easily supplied by milk, sweet and sour. This year grain has been at such a good price that I have boiled every bit that has been fed to my chickens. I find that it goes

as far again and the fowls seem to do just as well as when fed on the raw grain.

The farmer who is not successful with poultry has no one to blame but himself. A great many of our large poultry plants originated in a small town in the back dooryard. Many were conducted by women, who began in a small way and grew up with the business, and it is only a matter of time until those plants will grow to large dimensions. Women are peculiarly fitted for such work. Some of these small poultry yards are only twenty by forty feet in size, but the owners are in a way to build up a lucrative business.

Our farmers would make more money and take more interest in a very profitable branch of farm business by investing a little money in pure-bred poultry. Some advantages of pure-bred poultry are: the flock is all uniform in size, with a uniform lot of eggs; also they are a better lot of layers and therefore are more profitable.

Hundreds are using the Personal on page 28.

Cocks, Cockerels, Hens and Pullets, for sale from the best laying strains of Standard-bred poultry in the Northwest. All varieties of Plymouth Rocks, Wyandottes, Reds, Cochis, Langshans, Leghorns, Pea-Fowls, Guinea-hens, etc.

Also Bull Terrier pups the most intelligent of all dogs. Prices low but QUALITY HIGH. Write at once stating what you want to pay for good stock.

DAKOTA POULTRY FARM
A. K. Johnson, Prop., - - - Kensal, N. D.

Don't Sell Your Eggs

When they are cheap pack them with my new method—will keep two years—will be as fresh as new laid eggs. No special place required to store them. Cost only 1/2c per dozen to pack them. Write me for circular.

MRS. B. F. WILCOXON,
Ft. Des Moines, Ia. Box 50.

ROSE COMB WHITE LEGHORN EGGS
15 for \$1; 30 for \$1.50; 100 for \$4. Circular.
M. F. Horning, - - - Alden, Minn.

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FROM THE NATION'S CAPITOL

By GUY E. MITCHELL

The value which comes from the use of manure in improving the physical and mechanical condition of soil—improving its texture—is stated by Professor Taliaferro of the Maryland Agricultural Station, to be often far greater than that derived from the actual plant food supplied and utilized by the crop. And yet there are thousands of farmers shortsighted enough to believe that \$1 a load for manure which they sell is a good profit to them.

Millions of acres of good farming land have been tile-drained with great benefit thereto, but there are millions of acres more in the country which will be improved, sooner or later, by such treatment. In many sections of the country, the experts of the Department of Agriculture state, the farmers are growing fair crops; but they do not realize that with tile-drainage they could greatly increase their crops. Soil drainage is a matter, however, which requires some study of the conditions. Systems which will perfectly drain some lands and enable their owners to produce maximum crops are entirely inadequate for other soils. The questions of the area of ground to be drained by a tile line and the depth at which the tiles should be laid are ones which each farmer must consider on his own particular farm. A great many experiments have been made by the government and the experiment stations; but these serve only as a general index, for soils vary and two adjoining farms, or even land in the same farm, may require different treatments. But the subject is worth studying. Many lands need drainage which appear to be naturally well-drained and the drainage literature of the Department of Agriculture which will be furnished on application is well worth reading. A well-constructed tile drainage system will last for years and the cost of installation is soon overcome by the increased production of the land.

Only recently the Department of Agriculture issued a bulletin describing the use of cement on the farm, in which it was shown that concrete tile drains are a means of reducing the expense of a system of drainage. But withal the ingenious farmer can at little expense manufacture his own drain pipes out of concrete by utilizing a homemade apparatus.

In a Wisconsin Experiment Station test in corn growing on comparatively naturally well-drained soil, the yield was more than doubled by tile draining, lines 70 feet apart, while with lines at 40 feet intervals the yield of both corn and roughage was increased over 300 per cent.

Beware of the castor-oil bean. Every year deaths are reported from eating the beans, mostly by children. Many people do not know that castor oil beans contain an active poison called ricin, which produces an agonizing death. Animals will not touch the foliage and it is believed that planting the beans in the garden will drive moles away. Altho the plant is a very showy one, it is not wise to have it about one's house because the beautifully colored beans are very attractive to the little ones.

The silo is by no means an ancient institution in the United States. The first known American silo for the storage of fodder was built in 1875 by Doctor Manly Miles, who was led to make the experiment thru French reports. The result was most satisfactory. The practice grew rather slowly, however, and seven years after Doctor Miles' first experiment the Department of Agriculture published a report giving the experience of ninety-one farmers and stockmen with silos in different parts of the country. While this early siloing was in general success, important changes have been made in methods. It was at first considered necessary to place heavy weights on the siloed material in order to press it down and exclude the air, but it was later found that it kept as well without pressure. It was also supposed that the silo should be filled with great rapidity. Now slow filling holds the preference. The first silos were "pit" silos and those are now sometimes built, but aside from their cheapness they have no advantage of consequence over those built above ground while a serious objection to them lies in the difficulty of feeding from them.

Some of the early silos were massive structures of stone, but wood was soon largely substituted as being cheaper and less conductive of heat and cold. Now, however, many silos are being constructed of hollow concrete blocks.

What looks to be a satisfactory solution of the wood pulp question and a means of supplying paper without unduly devastating the forests, has apparently been found in the bamboo.

The great value of bamboo for paper making was urged by Routledge in 1875, and his conclusions are now amply confirmed by Raitt, who has recently published the results of numerous experiments of his own on the mill scale in Burmah, Bengal, Malabar, and Straits Settlements, and by Richmond in the laboratory of the bureau of science at Manila. Raitt finds in bamboo a really inexhaustible raw material. He recommends the establishment of bamboo

plantations so arranged that one-third of the whole plantation shall be cut over every year. This will secure absolute permanence of growth, and in fact such systematic cropping will increase production. Raitt finds the yields of bamboo to be eleven tons per acre where the growth was poor, eighteen tons with moderate growth, and forty-four tons per acre with luxuriant growth. The best yields 44 per cent of fiber and the best results in treatment were secured with three-year-old shoots. The internodal pieces alone were digested, the rejected nodes amounting to 8 per cent of the total weight. The stems were cooked at sixty pounds pressure for ten hours with thirty pounds of 76 per cent caustic per hundred-weight of dry bamboo. The fiber bleached to good cord with twenty pounds of bleach per hundred-weight.

Raitt further finds that the stems were easily reduced by the sulphite process, giving a yield of 51 per cent, and bleaching to a brilliant white with sixteen pounds to the hundred weight. He estimates that in a 200-ton sulphite plant at Rangoon the cost of bamboo fiber will be \$25.30 a ton.

A properly situated mill is assured of a regular supply with a yield per acre every third year greater than that resulting from the cutting over of well-grown spruce lands of good stand. Bamboo in fact has been known to grow two feet in three days in the Philippines. It is interesting to calculate from Raitt's figures for moderate growth that only about sixteen square miles is required to maintain indefinitely the supply of bamboo for a 100-ton mill.

Many farmers are drawing against their bank accounts to a greater extent than the amount of their annual deposits. The fertility in their soils is their bank account and they are constantly depleting it. And yet if they will, they can instead add to their bank account. They can do better cultivation and plow under more legumes and feed their crops on the farms, selling the meat or dairy products rather than the grain and thus constantly add to their bank account of farm fertility. And this with the use each year of less and less commercial fertilizer.

Secretary Wilson has been in Chicago in attendance upon a meeting of his chief inspectors, under the meat inspection law, the enforcement of which is under the Department of Agriculture.

About 150 inspectors gathered for the session, and methods, details and the general workings of the law and the system of inspection, labeling, etc., constituted the subject of discussion. The men came from every state in the Union and they represent the most re-

markable extension of Federal activities that has taken effect in recent years.

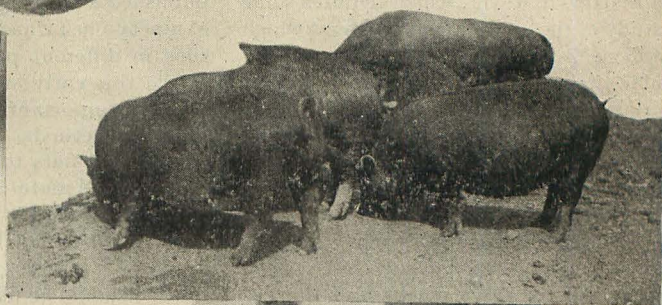
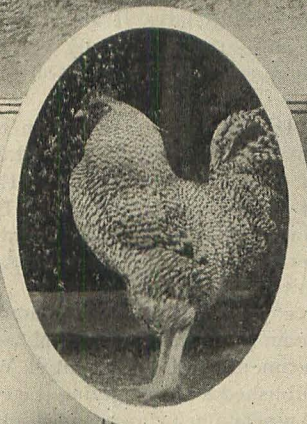
Dire predictions of disaster to the nation's provision trade were made when it was proposed to establish complete supervision of the interstate traffic in meats. It was denounced as an invasion of the Constitution, an interpolation of something into that venerable document that would surely cause the fathers of the republic to turn in their graves. It was despotism, anarchy, outrage. But public sentiment was insistent and Congress went ahead and passed it.

The Department of Agriculture quietly set about devising a system for enforcing the law. Inspectors were appointed, and put at work. The system required a little modification from time to time as experience showed faults. But broadly speaking, the National Government assumed complete supervision of this immense industry without ever a jar to fundamental business conditions.

Great attention has been devoted to the sanitary conditions of packing establishments, and of their employees. It is said by the people who have been in close touch with the operations of the new law, that the achievements along this line have been almost unbelievable. The packing house managers and owners, once assured that the law was going to be enforced up to the handle, decided to co-operate in making it as successful and as little onerous as possible. Occasionally an establishment had its products excluded from interstate trade for failure to comply with regulations; but those cases were rare, and commonly arose from misunderstandings. In every case compliance was induced very soon after the exclusion was undertaken.

Today the packing houses are declared to present a picture that is little less than revolution from former conditions. The meat trade both foreign and domestic has thrived where it was expected—by the legislation's opposition—to droop and die. It has never in the country's history been so important an element in the country's commercial life as in the last year, because of the immense amounts of foreign gold that it brought to these shores when the panic of last fall made gold necessary. The foreigners could get along without a good many things from America, but meats and cotton and cereals brought the gold that saved the situation, and are still bringing it.

Corn which has become molded or mildewed is frequently kiln-dried and while this prevents further growth of the mold organism it by no means re-



Hogs and Poultry—A Paying Investment.

stores the feed to prime condition. Such grain is not relished by animals, is moreover, unwholesome. It is false economy to use damaged feed, even if such feed can be procured for the proverbial "song."

The president of the New York City Board of Health states that of eight hundred samples of food recently collected, only thirty-five were found to be adulterated. The great majority of food men are evidently working in har-

mony with the provisions of the food law.

Fall in Buckwheat Cakes

The story of the fall of the buckwheat cake, from the time of glorious tradition, forty years ago down to the present is one of sadness and gloom. As told by the statistician of the Department of agriculture, this acme of our childhood is fast reaching a condition of innocuous desuetude. In 1866 when the first authentic buckwheat returns appeared,

the country devoted 1,045,000 acres to the crop, and raised 22,791,000 bushels of pancake material, with a farm value of \$15,413,000. Now we have but about 750,000 acres, and raise 14,500,000 bushels worth some \$8,000,000. In ye olden days Pennsylvania was the banner state, with near half a million acres devoted to buckwheat, and New York came second with 250,000 acres. Now Pennsylvania has only 250,000 acres while New York holds the banner with about 325,000 acres. During this period the average yield per acre for the country has decreased from 22 bushels to about 18 bushels. Forty years ago Maine grew an average crop of 31 bushels. Today Iowa averages only 12 or 13 bushels per acre. The average price on the farm has fallen about ten cents a bushel.

Cowpea Causes Wonder

A peculiar incident occurred recently at Flatonia, Texas, in connection with well-boring operations by L. W. Lyon. The well had reached a depth of 72 feet below the surface when a seed, unknown to Mr. Lyon was encountered. He stated that he was quite certain that the seed had not dropped into the well, and wondered if it could possibly have lain dormant in the earth for centuries. It was therefore transmitted to the botanists of the United States National Museum for examination, and the question settled by the establishment of the fact that it was an ordinary cowpea. As cowpeas have been known in Texas for only a little over half a century, it became evident that the seed must have dropped into the well. Thus a little knowledge disposed of what might have remained an unsolved mystery of the Lone Star State, to be handed down by oldest inhabitants for all time to come.

Assistant Postmaster-General DeGraw, who has been so persistently spreading the good roads propaganda, with a view to securing the improvement of rural delivery roads, expressed himself as greatly pleased with the results obtained and gratified at the manner in which not only the large metropolitan newspapers, but the small local papers thruout the country have taken hold of the subject and furthered his efforts.

General DeGraw stated there will be no relaxation in this work but the Department will continue to earnestly insist that if those who are receiving mail by rural delivery desire to continue as its beneficiaries, they must do their part in seeing to it that the condition of the roads is kept up to a proper standard to enable carriers to deliver mail with ease and facility and without interruption.

The Department is trying to bring the farmers to an understanding that good roads redounds more to their benefit than they do to the postal service, for while good roads make the carriers' work easier and lessen the wear and tear on their horses and vehicles, they enable farmers to rely with certainty on receiving their mail daily at a fixed time, giving them the advantage of market quotations, enable them to market their produce more advantageously and with greater ease and thus increase their farm values.

One section of good roads in any community is the best possible argument that can be put forth for more, and it invariably leads to a demand for more of the same kind. The trouble lies, Mr. DeGraw says, in making the start—in getting sufficient interest aroused to take the initiative steps. These are the things which the Post Office Department is trying to accomplish.

To illustrate what may be accomplished for good roads by a zealous effort: On May 14 of this year, the attention of the postmaster at Peru, Indiana, was called by the Department to the bad condition of roads on rural routes out of that office and the postmaster reported on July 18, that work was being done on seven of the twelve routes. A local meeting was called at Peru on July 11th, and it was decided to request the detail of an engineer from the Good Roads Office, Department of Agriculture, to supervise the construction of an object-lesson road, and in pursuance of a state law contracts were let to the amount of \$85,000, for the construction of graveled roads in the county. Here is an instance of practical good roads work.

It has often been charged that "if it were not for the rural delivery service the postal budget would, each year, show a handsome profit. While it is not contended that rural delivery is self-supporting, General DeGraw takes issue against the statement that the postal deficit results entirely from the disbursements on account of rural delivery. The first rural delivery service, he states, was established in October, 1896. For the year 1897, the sum of \$14,840 was expended on account of rural delivery, and the postal deficit for that year was \$11,411,779. Ten years later, in 1907, the expenditures on account of rural delivery had increased nearly two-thousand fold, the amount of the appropriation for rural delivery for that year being \$28,350,000, while the postal deficit had dropped to \$6,653,282, or nearly 60%. It is impossible to compute exactly, or even approximately, what proportion of the postal revenue should be credited to rural delivery, but it is certain that rural delivery has been instrumental in increasing the general

postal receipts very considerably. Whatever may have been the causes contributing to the large increase in the postal deficit for the fiscal year just closed, it is asserted that the deficit is not wholly or particularly due to the expenditures for the extension and maintenance of rural delivery.

How many farmers' wives enjoy the home gardens they should? While there is vastly more raised in the average farm garden now than some years back, there are yet many farmers who do not take full advantage of this privilege. In these days of great crops, which are to bring in the money, and when the smaller products which furnish the living of the farm are largely overlooked and always given a second place in supposed farm economy, it is a pleasure to picture the scene described in Irving's *Ichabod Crane*, where the farm of the old Dutchman is laden down with the products of his own fields and gardens and where his store-house and bins are groaning in plethora.

On such farms the owners were independent of the world. They made at least their living from the farm. That was the first consideration. Never the times so hard that they could be vitally affected, they could not be foreclosed. In their farm economy they required no commercial fertilizer to start them in debt. Plenty of stock they had and plenty of clover they planted and their land produced well. They took their wheat and their corn to mill; their women spun them garments with wool sheared from their own flocks. They raised their own fruit and their tables were laden with vegetables, winter and summer, the best of their kinds. The shelves in their cellars and storehouses were stocked with jams and jellies and the floors with barrels of potatoes and apples. Trenches were filled with roots and protected against the winter. Long rows of rashers of bacon and juicy hams swung from their rafters, and during the winter a side of beef hung always in the freezing air. During the cold months they wove their baskets and their mats and made their brooms, and they created and improved a hundred things for which the up-to-date farmer now pays his cash to somebody else.

Probably it is not practicable to go back to such "good old times." The good old times, when brought down to date, are not at all satisfactory. Knowledge spoils men where ignorance is bliss. Yet cannot a few lessons be learned from the methods of well-to-do "diversified" farmers of "before the war?" An abundant garden, good fruit, furnishing the farm table with everything desired the year round; this is just as practicable and can be done as easily and cheaply now as fifty years ago. And too, are

there not a great many things which can be produced par excellence on the farm today, yet which it has become customary to rely upon from the store?

Wood is bound to weather and rot away, sooner or later. It is worth while to know how to postpone this evil day—how to best preserve it. Chemistry has come greatly to the aid of the farmer in enabling him to treat posts, poles and other timbers so as to kill or keep out the germs of decay. This is a more important matter than it used to be, because lumber of all kinds has greatly increased in value, and the end is not yet. A primer of wood preservation—circular 139, Forest Service—contains some good directions and can be had for the asking.

The smallest inhabited island in the world is probably that on which the Eddystone lighthouse stands. At low water it is 30 feet in diameter; at high water the lighthouse, whose diameter at the base is $28\frac{3}{4}$ feet, completely covers it. The lighthouse keeper's garden is in the lighthouse windows.

While manure may contain the same amount of actual fertilizing constituents as a given amount of commercial fertilizer, its benefit to the soil is much greater owing to its addition of humus. When manure is incorporated with a soil it greatly improves the texture, loosening a heavy, compact soil, and binding together a light, leachy one, making the soil more friable, warmer, more retentive of moisture, and more congenial to plants in every way. Some experiments conducted by Professor King at the Wisconsin Agricultural Experiment Station, showed that certain manured land contained 18 tons more water per acre in the upper foot of soil than similar land unmanured, and 34 tons more in the soil to a depth of three feet. Manure exerts a quicker beneficial influence on the texture of soils than green manures. He concludes that manures will also aid in equalizing the supply and distribution of water in the soils; that they will exert a material influence in making soils warmer and that manured land is less subject to the denuding effects of wind and rain.

Manures act chemically on soils, by adding new stores of plant food, and by their decomposition in the soil they give off carbonic acid gas, which unites with the soil waters and increases its dissolving action on mineral plant foods. It also provides the formation of humates in the soil, and thus renders inert mineral plant food more available. The temperature of soils will be materially raised as a result of the chemical actions.

Life in a metropolis makes young children sharp, but not clever; it often destroys their chance of ever being clever; for it hastens the development of the brain unnaturally; it makes them superficial, alert, but not observant; excitable, but without one spark of enthusiasm; they are apt to grow blase, fickle, discontented; they see more things than the country-bred child, but not such interesting things and they do not properly see anything, for they have neither the time nor capacity to get at the root of all the bewildering objects they crowd into their little lives.

It is a common saying of the wise, that, despite the magnificent performance of the American hen, in aggregate, every individual, "eats her head off." To increase the earnings of chickens there are three lines of poultry-keeping which may be followed. One is the production of standard-bred chickens, which, for those who understand the breeding of high-scoring specimens, is both fascinating and profitable. A second line of poultry work is the production of varieties that shall excel in quality, rapid growth and profitable fattening. The third line of poultry work is breeding for increased egg production. This should be the most important for the value of eggs sold is about twice that of the chickens marketed. Breeding for egg production is tedious work, but the gain derived for producing better lay-

ing strains well pays for the efforts spent.

The handsome bloom of the dahlia is the product for which this plant is now grown; yet were all the Irish potatoes to be destroyed, it is possible that this ornamental plant would to some extent replace them. When roasted the dahlia bulb is wholesome and toothsome and makes a fair substitute for the potato. When first introduced into Europe during the days of the Louises it was not for its flower but as a vegetable that it was valued.

When Jefferson Davis was a United States Senator from Mississippi, and Secretary of War in the cabinet of President Buchanan, his wife was one of the prominent society women of Washington. Her activities were not, however, limited to social functions. She took a deep interest in the beautification of the National capital and one of the things she did was to plant a little cedar tree in the National Botanic Garden. This tree has continued to grow and is now a fine specimen of the conifer tribe. It is well known in Washington and nearly all Southern visitors pay their respects to it.

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OUR SCHOOLS.

IMPROVING THE RURAL SCHOOL GROUNDS

W. G. Baxter, in Farmers' Tribune

Are the average country schoolhouse and its surroundings elevating and inspiring to look upon? With a few exceptions the familiar acre-plot is the barest, most desolate, wind-swept piece of soil that can be found in the neighborhood. The rectangular, white-washed school house with its bare uncovered porch is set in the corner of a cow pasture, or more probably in the edge of a cornfield. Not a tree has been planted to furnish shade from the sun in June, not a bush to obstruct the drifting snows in January. The view from the front door extends a half mile or more down a monotonous stretch of parallel corn rows. What a splendid place at which to instill into the youths a desire to leave the farm!

Teachers should interest their scholars in improving the school grounds. Each new student should have his favorite tree set out to perpetuate his name among the other specimens in the school ground history. At the Arbor Day plantings each scholar may be asked to set out a favorite tree in a proper place on the grounds. The teacher may induce the children to care for their trees by inspecting them once each month and reporting the name of the scholar that cares for the tree that has made the greatest development.

Before beginning the planting upon the school grounds a definite, well-considered plan should be drawn up. It may be a simple blackboard or a pencil sketch, but it should show the proper location for the trees and shrubbery, each placed to give a harmonious effect in the finished product.

The place to begin the work is along the north and west sides of the grounds. A dense windbreak should be established on these exposed sides to ward off the chilling gusts of zero winds that are so common in the prairie states. White spruce is a very desirable tree for this purpose as it will stand unlimited abuse and is not exact in its choice of soils. Its short, thick-set foliage gives it a denseness that wind or snow cannot penetrate.

A clump of shade trees should be stationed a little to the south and west of the school house to obstruct the glare of the sun and to furnish a location for a hammock and a swing. A few trees can be thrown into the corners and scattered by groups along the two open sides. The direct view from the front should not be closed by the plantings but should be arranged

to form a vista with the school house as the background of the scene as viewed from the highway.

The kind of trees planted is not so important as their location. Go to the woods, get anything that will grow and locate it properly in your plan. Dig the bushes out of the fence corners and plant them about the school house; get a variety so that the collection will include as large a number of species as possible; give a prize to the scholar who can properly name the largest number of these by a given

date. This will make the grounds a place of unconscious study as well as of beauty and recreation.

The teacher and the director should combine in their efforts to arouse the school patrons in the improvement. Funds for such a purpose are usually not available but will have to come as donations from the patrons of the school. This fact will aid in the success of the undertaking, as each donor will have a personal interest in helping the good work along.

OILS, PAINTS, AND PAINT PIGMENTS.

WILL PURE PAINT LEGISLATION GIVE US BETTER PAINTS

Hon. John Dewar, Pittsburg, Pa.

(Concluded.)

The manufacturers whose policy it will be to seek to produce the best paints, colors, oil and turpentine will become educators of the consumer, showing and proving the merits of each pigment and combination, leaving to the painter and consumer the judging of their worth by practical demonstration. Their commercial instinct will devise the mediums of information that the manufacturer of indifferent or dope goods dare not avail himself of. The consumer who is an observer of results will soon acquaint himself with that which is best suited for his purpose, when he is assured that he gets it by specifications on the label. He will then be indeed from Missouri.

Legislation along the lines as set forth in the present bills will stimulate the wise and progressive manufacturer, to a greater incentive to attain the best paint and paint materials possible, to meet the different requirements of the consumer. There will be no fear of publicity displayed on his part, because he will recognize a commercial necessity, that the consumer to be fully acquainted with the merits of his materials, and being public knowledge let the other fellow do better if he can.

The leading objection made by the manufacturers opposed to legislation, and it seems to me the only argument so far advanced in support of their position, is that publicity would be given to formulae of certain materials or specialties by reason of which their goods could be duplicated by competitors, thus causing great financial loss. (I refer to the statements made before the Congressional and Senate committees).

A parallel case can be cited in the drug business, as conducted today. We have all the well known brands of so-called patent medicines such as Dr.

Bull's Cough Syrup, Hostetter's Stomach Bitters, Lydia Pinkham's Compound, Peruna and hundreds of other preparations good, bad and otherwise. The only protection to the manufacturer is the copy-right name, the formula is not a secret. The secret of success is frequently in the advertising and very often not in any real merit in the preparation.

Better paint would result from the same causes as have produced better drugs, at least a radical change in the formula would be made owing to the accumulation of such knowledge as has followed the probe in food and drug legislation.

I fully realize the handicap of the small manufacturer without the aid of competent paint chemists and modern appliances necessary to meet the demands in the march of progress, but a great field will be open unto him from which he can glean and be made wise by the success of his more advanced competitor. Probably the most interesting development in connection with paint legislation has been, that since it started in North Dakota, paint manufacturers have doubled or trebled the number of chemists used in the industry. Surely this is the developing age with the slogan quality accented above quantity.

The manufacturer who has flourished by misrepresentations will find his occupation gone, altho at the present time he is somewhat in evidence as an obstructionist to honest legislation, but shortly he like the Arab, will silently fold his tent and steal away, or at least there will be a reformation in his formulas. Then will disappear the package labeled white lead which on examination is found to contain:

White Lead	100.00%
Lead sulphate	5.07%
Zinc oxide	25.00%
Barytes	69.70%
Undetermined Matter	0.23%

This being a sample analysis taken from many materials sold of more or less virtue and found in the market today.

A much advertised "Mixed Paint," (gray) found very generally distributed over the country prepared for painter and public warranted in some cases for a period of years, on analysis showed up as follows:

Analysis of Vehicle

Vegetable oil (apparently slow grade linseed oil).....	72.2%
Benzine drier	3.8%
Water	24.0%
	100.00

Analysis of Pigment

White lead	13.85%
Lead sulphate	00.00%
Zinc oxide	34.88%
Calcium carbonate	26.84%
Barytes and Silica	23.10%
Undetermined, color, etc.	1.33%
	100.00

And other formulas likened in a measure unto it are legion and totally unfit as a protective agency. An Ochre, practically common clay purchased by the unsuspecting painter for tinting purposes, he not being a chemist, but being beguiled by the seductive claims made by representative or label, was found most unsatisfactory. His attempt to produce a gray or buff color, the quantity necessary about equaled his white base, giving him a combination composed of about 50% base and 50% clay with a color not buff, but likened unto the latter pigment, mud.

A Burnt Sienna from which so much is required as a tinter or stain was found to be fugitive to the extreme, being simply stained china clay. Surely the knowledge of practices producing anything like the above formulas and the effort to protect them by the claim of a "Trade Secret" which is often times but a cover for fraud and deception, and the spectacle of those who are in the business and waxing fat on the gullibility of painter and consuming public, should be sufficient cause for the very stones to cry out for honest legislation. For with it many other frauds or deceptions that now exist and flourish will pass away, giving place to truth and a higher degree of success and prosperity to the manufacturer whose goods will conform with his claim as it appears on the label.

In addition to the above, permit me to quote from an address by a prominent paint manufacturer the following on weights and measure:

"The sales of all paint products exceeds \$100,000,000 annually, and here again, previous to a reform inaugurated this year by some of the manufacturers themselves from within the national association of paint manufacturers, investigation has shown that in ready mixed paints, oil colors, white lead, etc., the average short weight and measure

given to the American people exceeded 15%, or over \$15,000,000."

In conclusion I would emphasize the fact that those opposed to paint legislation have not in any way shown that the label requirements of the bill mentioned will not be productive of better paint and paint materials. When the purchasing consumer can see and examine the pig he certainly will not buy the other fellow's pig that is in the poke.

Today it is a fact beyond controversy that it is the leading paint manufacturers whose products embrace practically all of the different kinds of paints and paint materials in use who are found among the champions for a descriptive analysis label, and some of them are now placing such a label on their packages. In fact while they have

suffered with others from the dishonest practices of some, they see in the honest labeling the bow (hope) for the betterment of present conditions and the insuring of a greater incentive to strive for better or the best paint and paint materials possible.

The speaker totally disagrees with the gentleman who is a jobber and manufacturer from Boston in his statement before the Senate Committee that it would require a police force as large as the standing army of the United States to enforce such a law. Personally the speaker has a much better opinion of the manufacturers of this country, but the position of a number would be improved by the reading of the hand writing upon the wall.



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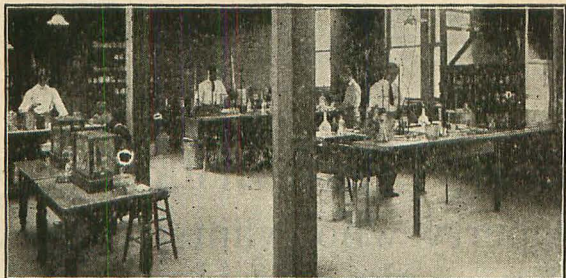
FULL WEIGHT KEGS

The Dutch Boy Painter on a keg guarantees not only purity but full weight of White Lead. Our packages are not weighed with the contents; each keg contains the amount of White Lead designated on the outside.

NATIONAL LEAD COMPANY

in whichever of the following cities is nearest you:
New York, Boston, Buffalo, Cincinnati, Chicago, Cleveland, St. Louis, Philadelphia (John T. Lewis & Bros. Co.), Pittsburgh (National Lead & Oil Co.)





34 Experts are Making Tests

to safeguard the quality of paints and varnishes. That is what you

can see at any time in the various paint and varnish plants of The Sherwin-Williams Co. They test all raw materials to see that they are not only of highest quality, but conform to standard in every respect. They apply both chemical and practical tests to all raw materials and finished products, and nothing is ever allowed to go out that does not measure up to the highest standard in every respect. Our special care and facilities for testing have been a very great factor in making

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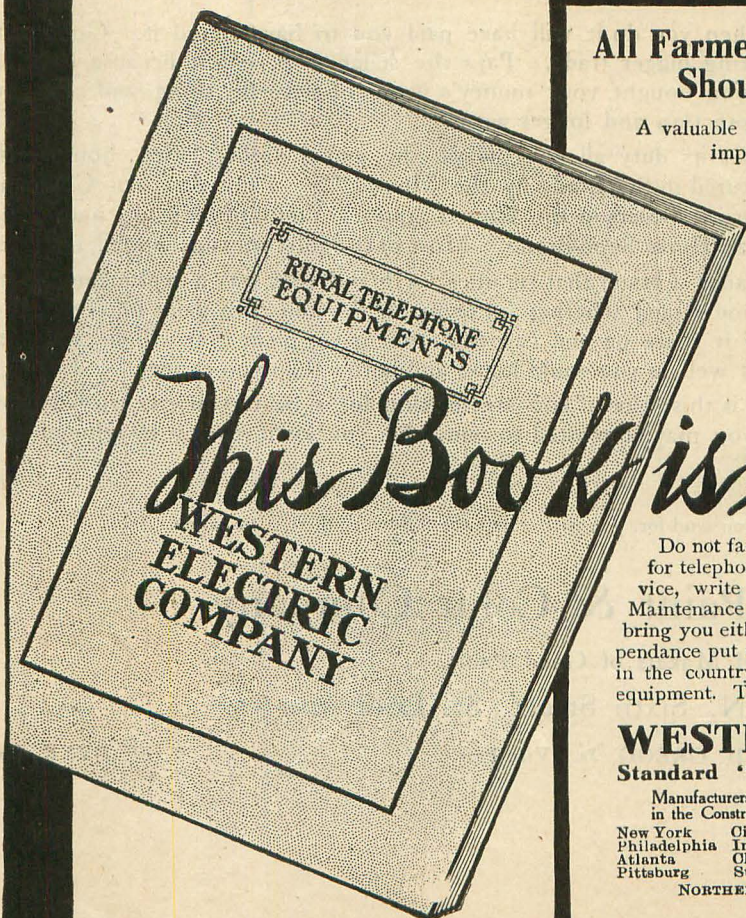
the exceptionally good paint that it is. You can always depend upon getting good results when you paint your house with S. W. P. Properly applied, it will withstand the most rigorous climate, and give splendid satisfaction under the hardest conditions. Be sure to ask your dealer for S. W. P. when you paint.



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897



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A valuable book on the rural telephone. It shows the importance of the telephone to the country dweller; it tells how to organize a telephone operating company, and gives model constitution and by-laws; it describes telephone equipment, apparatus and construction used in rural lines; it treats of maintenance and operation; it tells what is needed for the construction of a rural line and how to estimate cost.

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Do not fail to get this book before making arrangements for telephone service. If you already have telephone service, write for our book, "Construction, Operation and Maintenance of Telephone Lines." A postal card request will bring you either book by return mail. Nowhere is more dependence put upon the telephone after it is once installed than in the country. Rural lines need the best apparatus and equipment. The recognized best is that made and sold by the

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Use Address Nearest You

IMAGINE, any of you, the following:
An owner of a piece of property who wants to make his house or his barn look better than it does, walks into a store where paint is sold, and brings his good money with him and is willing to pay that money for good paint for a good purpose.

He doesn't know very much about paint; but he has been led to believe that the dealer does. And so he trusts that dealer. He gives him his money, and he gets, let us say, not good paint, or not as good as he bargained for, but instead a paint that is otherwise. He buys "otherwise-paint."

Now who has the worst of this?

Everybody concerned—maker, seller, and user. Besides these there is that helpless and most conspicuous sufferer of all—the house, or the barn, or the roof, or the fence, or the interior, or the buggy, that not only gets it but shows it.

This sort of thing happens every day. It ought not to happen any day. Some day it isn't going to happen any more. Already this business of mutuality of confidence is not only in the air but may be realized in the stores of some honest dealers where the honest paint of an honest maker is sold at an honest price to the man who comes to buy.

The moral idea in business, and what we may term the business idea in what is moral, is here; and it has come to stay.

You can find it even in paint; and when you do it will have paid you to have found it. Good paint pays. Pays the maker who made it by making bigger trade. Pays the seller who sells it because it brings you back to buy again. Pays you because you bought your money's worth of a worthy thing, and pays your house because of better looks and better protection and longer wear.

There is one make of paint that does its duty all four ways: by maker, seller, user, house—the name of it is the Horse Shoe Brand, manufactured in St. Louis by the Mound City Paint & Color Company, and sold to, and bought by, the most reliable paint dealers in the United States. You'll never find a poor dealer or an unreliable tradesman handling Mound City Horse Shoe Brand. Most of the good ones do; not all, but most.

Horse Shoe Paint is the name of a brand; a brand that signifies; a brand that has a real meaning, and value to you. When you see the Horse Shoe Brand whether on paint for the house, or paint for the barn or paint for floors, you can know by the sight of it there on the can that that is the paint that will do, and does, what you want it to do, and does it well; as well as you could hope, and better than you expect.

And so, the main point of the matter is this: that if you are looking for a paint you can trust without going through the usual tragedy of a trial—you may be trusted to remember your own interest by remembering the name and the brand of "the Horse Shoe."

When you get our color card that you send for, you will realize the difference there is in paints.

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Good Makers of Good Paint.

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